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An Exploratory Examination of the Interrelationships Among Parenting Beliefs, Parenting Stress, and Parenting-Child Interaction in the Context of Maternal Polydrug Addiction and Prenatal Drug Exposure

Darlene Grant
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William R. Nugent, Major Professor

We have read this dissertation and recommend its acceptance:

Catherine A. Faver, A. Elfin Moses, Schuyler W. Huck

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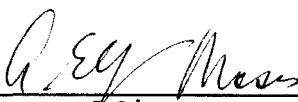
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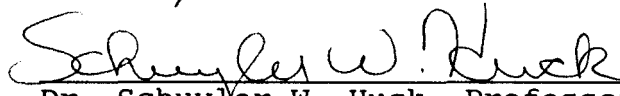
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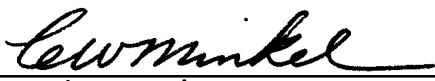
We have read this dissertation
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Dr. Catherine A. Faver, Professor


Dr. A. Elfin Moses, Assoc. Professor


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Associate Vice Chancellor
and Dean of the Graduate School

**An Exploratory Examination of the Interrelationships Among
Parenting Beliefs, Parenting Stress, and Parent-Child
Interaction in the Context of Maternal Polydrug Addiction
and Prenatal Drug Exposure**

**A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville**

**Darlene Grant
December 1993**

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This dissertation is lovingly dedicated to the memories of Jeannie Inge Vester (1900-1980) my grandmother and comforter, Dr. Carmello Cocozzelli (1955-1990), mentor and friend, and Alex Palmer Haley (1921-1992), friend, guide and inspiration.

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ABSTRACT

The focus in this dissertation was on the interrelationships among parenting beliefs, parenting stress, and parent-child interaction. It was hypothesized that mothers' addiction status moderated these interrelationships when controlling for the effects of income, level of education, race, age, number of children, and child's prematurity status.

Data from a program evaluation of a residential addiction treatment program and comparison data from five day care centers were collected from August 1991 to August 1993 using the Adult-Adolescent Parenting Inventory, the Parenting Stress Index, and the Parent-Child Interaction Form. The sample included 39 polydrug-addicted and 31 non-drug-addicted mothers of infants and young children (up to three years old). The groups were similar in racial make up, age of mothers, and the prematurity status of the target children. The groups differed significantly in terms of marital status, income, number of years of education, and number of children.

Zero-order and partial correlation analyses were used to test the research hypotheses. Power analyses were used to address the ability to detect effects given the small sample size.

The zero-order correlation results for $N=70$ supported

the hypothesis of interrelationships among parenting beliefs, parenting stress, and parent-child interaction. Mothers, regardless of addiction status, tended to have higher levels of stress associated with negative beliefs about parenting and child development; higher stress levels were associated with deficits in parent-child interaction. Positive parenting beliefs were associated with high evidence of appropriate parent-child interaction.

Controlling for the effects of background variables, results for the poly-drug-addicted mothers indicated no interrelationships among parenting beliefs, parenting stress, and parent-child interaction. However, the power of these tests for within group correlations was quite low. A negative correlation was found between parenting beliefs and parenting stress in the non-drug-addicted group. Tests of the significance of the difference between the group partial correlations coefficients for the relationship between parenting beliefs and parent stress indicated no significant difference. The power of these tests was also very low due to the small sample size.

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OVERVIEW

Today we face a crisis of epidemic proportions in the United States. Maternal drug addiction and prenatal drug exposure place an estimated 5 million mothers and 375,000 infants at risk for medical problems, developmental delay, and death (DeBettencourt, 1990; Kusserow, 1990; Rieder, 1990; Chasnoff et al., 1990, 1992; Barth et al., 1993; Lecca and Wats, 1993). A gap exists in our knowledge about the parenting practices of drug-addicted mothers. In the face of growing numbers of drug-addicted mothers and drug-exposed children, increased attention to this lack of knowledge is important.

Using cognitive-behavioral model and social-learning theory as the theoretical foundation, this dissertation examined the interrelationships among parenting beliefs, parenting stress, and parent-child interaction in a sample of 70 mothers (39 polydrug-addicted and 31 nonaddicted mothers) and their youngest child (prenatally drug-exposed and nondrug-exposed infants and young children up to three years old). The research question posited that mother's addiction status (polydrug addicted or nonaddicted) moderates the interrelationships among parenting beliefs, parenting stress, and parent-child interaction.

CHAPTER I

INTRODUCTION

This study examined the interrelationships among parenting beliefs, parenting stress, and parent-child interaction in the context of maternal polydrug addiction. The dimensions of parenting beliefs examined included beliefs that sample mothers held about empathy towards their child's needs, beliefs in the value of physical punishment, and beliefs regarding role reversal in the parent-child relationship. The dimensions of parenting stress included mother's perceptions of the challenges presented by her child's behavior, i.e. the temperament-related behavioral characteristics of her child. Parenting stress dimensions also included the quality of mother's marital/significant-other relationships, the social support network available to her, and her perception of the general stresses of parenting (such as feelings of incompetence and isolation).

Dimensions of parent-child interaction were examined using treatment and/or child day care center staff observations and ratings in three global areas. The first area involved the care and experience that each mother provided her child (including physical care, patterning and sequencing, input of motor and sensory stimulation, input of language and communication, permitting exploration, and

guiding social relations with others). The second area involved the assessment of three essential parental attitudes (including maternal interest in her child's achievement and mastery, enjoyment of the child as a person, and maternal self-concept and role). The third area involved assessment of mother's role in child developmental issues important to personality development (including establishment of trust and personal relations, dealing with separation and individuation, and establishment of conscience mechanisms).

The purpose of this study was to gain perspective on the interrelations among parenting beliefs, parenting stress, and parent-child interaction, and to (1) examine the impact of addiction on these interrelationships, (2) be able to compare and contrast one type of mother with another, and (3) examine how background factors (including mother's income level, education, race, age, number of children, and child's prematurity status) are related to parenting beliefs, parenting stress, and parent-child interaction.

Use of a nonaddicted comparison group provided for a description of differences and similarities between polydrug-addicted and nonaddicted groups on these matters of parenting beliefs, parenting stress, and parent-child interaction. The research described here was exploratory, descriptive and observational. This combination of design foci has been common in research involving addicted and

nonaddicted mothers (Mannino et al., 1968; Blinick et al., 1969; Nichtern, 1973; Singer, 1974; Colten, 1980; Hoar, 1983; Hagan, 1988; Fleming et al., 1988; Barden et al., 1989; Easterbrooks, 1989). The focus on the interrelationships among parenting beliefs, parenting stress, and parent-child interaction in the context of maternal polydrug addiction is, however, fairly unique (Colten, 1980; Burt, Glynn, and Sowder, 1983; Jacobson, 1987; Chasnoff, 1988; Lex, 1990; Bennett, 1991).

The research described here was conceptually and theoretically grounded in the cognitive-behavioral model and social-learning theory. This theoretical framework was chosen because it is current and vibrant. The vibrancy of the cognitive-behavioral model is evident in the constant developments in terms of theory, application, and utility for researchers and practitioners. This framework was chosen because it offered a number of practical approaches to dealing with a number of problems including addiction, depression, stress, antisocial disorders, phobias, and anxiety disorders.

Populations within which the interrelationships among these variables have been examined, using a cognitive behavioral model, include hyperactive children (Webster-Stratton, 1990), abusive families (Burgess and Conger, 1978; Conger et al., 1984; Azar, 1986; Reid et al., 1987), depressed mothers and their children (Kochanska, 1990),

communication handicapped children and their families (Sigel, 1992), adolescents undergoing psychiatric treatment (Mannino et al., 1968), low income families (Rodin and Glasser, 1972; Leeper et al., 1983; Egeland and Farber, 1984), deaf children (Gordon, 1957), and addicted mothers (Wellisch and Steinberg, 1980), as well as nonaddicted groups (Sears and Maccoby, 1957; Zunich, 1961; Endsley et al., 1979; Mohan, 1981; Waterloo, 1990).

Three assumptions are used empirically and in practice that were important to this study. The first is that addiction negatively impacts parenting. The second is that maternal behaviors do not occur in isolation but are part of a complex system influenced by child characteristics, family stress, social context, psychological functioning, and economic context. The third is that by intervening on mothers' addiction and on parenting deficits we will ultimately enhance individual parent-child functioning and dyadic interaction. The focus of this study arose out of these premises.

The remainder of this chapter sets the historical background of this study and presents the purpose, objectives, and research question. Chapter II provides a discussion of the theoretical underpinnings of this study. Chapter III provides a review of the parenting and addiction literatures. Chapter III also provides a review of methodological issues discussed in the literature related to

the study of addiction, parenting beliefs, parenting stress, and parent-child interaction. Chapter III concludes with the dissertation hypotheses. Chapter IV describes the methodology of this study and includes an in-depth discussion of the context in which data were collected. Chapter V provides the results and statistical analyses. Chapter VI provides the discussion and conclusions.

Historical Background

The incidence of children born to drug addicted women in the United States is increasing at an alarming rate. Estimates from the National Institute on Drug Abuse (NIDA, 1990) suggested that "of the 60 million women of childbearing age in the U.S., 8 percent--nearly 5 million women--were illegal drug users" (NIDA, 1991). Chasnoff et al. (1985) and Berger et al. (1990) estimated that as many as 10 percent of all pregnant women have used cocaine one or more times during their pregnancy. Maternal drug addiction affects an estimated 375,000 newborn babies each year (Chasnoff, 1990; Feig, 1991). This estimate is up 300 percent from 1985 reports (Elshtain, 1990). Maternal use of alcohol during pregnancy also exposes the unborn child to increased risks. Experts estimate that one in three of every 1,000 children born (i.e. 330 out of every 1,000

children) in the U.S. is diagnosed with fetal alcohol syndrome (Lecca and Watts, 1993).

The drug-addicted mother is at increased risk for medical complications, exposure to HIV, prosecution, incarceration, loss of financial and family support, and loss of her child or children (Bauman and Levine, 1986; Amaro et al., 1989; Bessharov, 1989a, 1989b; Segal, 1991; Barth et al., 1993). The children of addicted women are at increased risk for premature birth, low birth weight, birth defects, respiratory and neurological problems, Sudden Infant Death Syndrome (SIDS), developmental disabilities, failure to thrive syndrome, abandonment, child abuse and/or neglect, placement into the foster-care system, and even death (DeBettencourt, 1990; Kusserow, 1990; Rieder, 1990; Chasnoff et al, 1990, 1992; Barth et al., 1993; Lecca and Watts, 1993).

The parental role is an important one in early childhood development. Molding the values and character of an unsocialized infant into those of a productive member of society requires a reservoir of time, physical and emotional availability, patience, and economic resources that is typically unavailable for many drug-addicted mothers (Steinhauer, 1983; Goetting, 1986). These same ingredients (a reservoir of time, physical and emotional availability...) are also unavailable to the majority of poor single mothers; a fact necessitating the distinction

between the impact of poverty, oppression and single parenthood on childrearing, and the separate effects of drug addiction on childrearing (Jeremy and Bernstein, 1984).

In the context of poverty, oppression and related low levels of education and limited access to resources, maternal drug addiction and prenatal drug exposure compromise all the ingredients for a healthy parenting experience and a healthy parent-child relationship. Drug affected parenting is often characterized by isolation, inconsistency, high levels of conflict, deviance, broken homes, abuse, and neglect (Densen-Gerber, 1973; Carr, 1975; Sowder and Burt, 1980; Bauman and Dougherty, 1983; Merrick, 1985; Tracy et al., 1990).

We do not know, however, in what ways many parenting variables are related in the context of maternal polydrug addiction or in what ways many parenting variables are compromised. One reason for these gaps in our knowledge regarding the parenting of drug-addicted women is the historical lack of treatment programs geared towards women's needs (Sowder and Burt, 1980; Tracy et al., 1990; Ahart et al., 1991; Feig, 1990, 1991; Barth et al., 1993; Lecca and Watts, 1993).

Addiction treatment programs have historically been male focused and dominated (Feig, 1990; Shikles, 1990; Barth et al., 1993). Thus they have not been committed to considering the addicted woman's issues and have been

particularly unable to meet the needs of the pregnant addict (Mondanaro, 1977; Beckman et al., 1980; Beschner and Thompson, 1981; Bauman and Dougherty, 1983; Woodhouse, 1990; Feig, 1991; Freeman, 1992; Barth et al., 1993). In the 1970s, however, addiction treatment programs and research began to focus on the crises experienced by women drug abusers (Sutker, 1981). Beginning in 1978, a time of peak usage of heroin in general, record numbers of women heroin addicts were involved in detoxification and treatment programs (Datesman, 1981; Mauge, 1981; Rosenbaum, 1981; Sutker, 1981; Moise et al, 1982). With the study of many of these heroin-addicted women, a period of increased attention to women's issues in drug addiction began.

In December 1991, the United States Congress reauthorized and expanded the Abandoned Infants Assistance (AIA) Act, established in 1988 to address the "boarder baby" phenomenon. "Boarder Babies" were abandoned drug-exposed, HIV positive, and chronically ill infants languishing in hospitals because of a woeful lack of appropriate out-of-hospital placements (Fomufod and Street, 1990). The reauthorization appropriated 12.6 million dollars to fund the AIA Act Amendments of 1991. The 1991 legislation not only permitted the development and support of coordinated, comprehensive intervention services to address the needs of these children, as previously formulated, but also included services to their families. This legislation contributed to

the ushering in of a period of significant attention to the treatment needs of both pregnant and parenting female addicts and their children (Segal, 1991; Barth et al., 1993).

This AIA legislation led to the initiation of 32 AIA programs throughout the United States. The Administration for Children, Youth, and Families, Children's Bureau in Washington, D.C. administered the funds. With these funds, the National Abandoned Infants Assistance Resource Center was also established to provide training, coordination, support, and technical assistance to each of the programs. The Resource Center was established as a repository for data gathered from each program. Assurance of the availability of nationwide demographic and other data regarding AIA program participants was an important Resource Center function. It provided for comparisons across samples of drug-addicted women in different parts of the United States. Demographic data in this dissertation, for example, were compared to the demographics of the national sample of AIA program participants. This use of national level AIA data is discussed further in Chapter IV.

Six of the Abandoned Infants Assistance programs are hospital-based, 22 are clinic or center-based, and 4 involve residential settings. Great Starts, in Knoxville, Tennessee, is one of the 4 residential programs providing transitional housing. Great Starts offers services to drug-

addicted women and their prenatally drug-exposed infants and young children (up to three years old) for up to one year. The program provides a residential setting for comprehensive rehabilitative services.

Statement of the Problem

A gap exists in our knowledge about the parenting practices of drug addicted women. Programs of intervention are being built with the support of a limited body of empirical knowledge regarding the functioning of drug-addicted women as parents and with a similarly limited body of knowledge regarding the relationship of other variables (such as parenting beliefs, parenting stress and parent-child interaction) to drug-affected parenting. Relationships among these variables are extensively examined in the nonaddicted parent population (Lytton, 1971; Radin and Glasser, 1972; Parke, 1978; Endsley et al., 1979; Holden and Edwards, 1989; Kochanska, 1990), but not in the addiction literature.

Comparisons between addicted and nonaddicted samples of mothers are consistently mentioned in the literature as one way to establish facts about the drug-addicted woman as parent (Bauman and Dougherty, 1983; Lief, 1985; Tracy et al., 1990; Woodhouse, 1990; Kearney and Ibbetson, 1991; Moore, 1991). A typical goal when using nonaddicted comparisons is to debunk myths about the drug-addicted woman

as parent. Use of nonaddicted comparisons may result in empirical data that support the building of effective treatment, intervention, and policy making strategies and programs.

A tremendous knowledge base has been built around the issues of parenting within the context of the nonclinical population of parents. Significant relationships have consistently been found between parenting behaviors and other variables including child's temperament, child's prematurity, parent's degree of education, parent's socioeconomic status, race, and culture. There remains, however, conflicting empirical evidence about the relationships among parents' beliefs, stress, and observed behaviors/interaction with the child (Mannio et al., 1968; Holden and Edwards, 1989). For example, several studies have been partly successful in demonstrating a relationship between expressed attitude and beliefs and observed parenting behavior and/or parent-child interaction (Mannio et al., 1968; Holden and Edwards, 1989). An in-depth discussion of this research is presented in Chapter II.

There is also a large body of literature on parenting and child outcome in high risk families that include one or more depressed or abusive parents (Freeland, 1985; Susman et al, 1985; Johnson, 1990; Richey et al., 1991). However, much less attention has been paid to the addicted woman as parent. No clear theoretical or knowledge base has been

developed regarding the moderating effects of addiction status on parenting beliefs, parenting behaviors, or the stresses of parenting. Less attention has been paid in the literature to the influence of background factors such as parent's age, income level, education, race, number of children, and child's prematurity status in this context of addiction, and the interrelationships among parenting beliefs, parenting stress, and parent-child interaction.

There are studies on the effects of parenting stress and parenting behaviors on child development (Conger et al., 1984; Abidin, 1989; Koeske and Koeske, 1990); cross cultural influences on parenting behaviors (Devereux, 1969; Laosa, 1981; Abraham et al., 1984; Gefllner, 1990); and parenting attitudes and mother-infant interaction (Hess, 1981; Lamb, 1983; Flemming et al., 1988; Barden et al., 1989; Harris et al., 1989; Lewis and Feiring, 1989; Johnson, 1990; Hall, 1992). Other studies have addressed the effects of child temperament on parenting (Milliones, 1978; Bates et al., 1979; Campbell, 1979; Bates, 1992; Sheeber and Johnson, 1992); the relationship of parenting beliefs and behavior (Lawton et al., 1983; Kochanska, 1990); environmental stress and parenting behavior (Conger, 1984); and the effects of socioeconomic class on parenting behaviors (Kohn, 1977; Peterson and Peters, 1985). Most of these studies were conducted within the context of the nonaddicted family,

however. Comparatively few of these studies considered a mother's addiction status.

In their study of patterns of childrearing in a nonclinical sample of mothers, Sears, Maccoby, and Levin (1957), for example, found that mother's income made a difference in child-training practices. The literature is filled with such examples of findings in nonaddicted samples of mothers (Stolz, 1967; Harman and Brim, Jr., 1980). Research involving the parenting practices of nonaddicted samples of mothers is common (Sears et al., 1957; Stolz, 1967; Bakeman and Brown, 1980; Harman and Brim, 1980; Clark, 1981; Bacon and Ashmore, 1984; Conger et al., 1984; Ashmore and Brodzinsky, 1986; Fisher and Fisher, 1986; Kochanska et al., 1989). Conversely, research involving the parenting practices of samples of addicted mothers is less common (Mondanaro, 1977; Rosenbaum, 1979; Lawson and Wilson, 1980; Lief, 1981; Bauman and Dougherty, 1983; Ahart et al., 1991; Segal, 1991). Further discussion can be found in the review of the literature in Chapter II.

This study addresses this gap in our knowledge base. This is an important area of study since programs such as the 32 AIA programs described earlier, including Great Starts, are being established around the country. These programs are being developed and implemented in a context of limited empirical knowledge. This situation also has significant implications for refunding efforts. The

government and other program funders are increasingly requiring this type of information to help them in adjudicating funds. It is important that we build a knowledge base upon which these programs can develop, enhance, and defend their intervention strategies and existence.

Programs are rapidly emerging to deal with a number of the unique problems that addicted women and their drug-exposed infants and children face. With this proliferation of programs for drug addicted women and their children comes the opportunity to explore relationships that have been hypothesized and tested by various researchers with only nonaddicted samples of mothers. Access to data from these programs, such as the data used in this dissertation, offer researchers unique opportunities to examine drug affected mother-child interaction and other family dynamics in a population that has traditionally been unavailable for extensive research efforts.

The Abandoned Infants Assistance (AIA) program is part of an extensive effort underway across the United States toward creating treatment programs for drug-addicted women and their drug-exposed children (Lief, 1981, 1985; Kusserow, 1990; Tracy et al., 1990; Feig, 1991; Pederson et al., 1990; Ahart et al., 1991; Freeman, 1992). This effort is in response not only to the boarder baby problem, but also to three realities: that pregnant women are not getting

sufficient drug treatment services (Lief, 1985; Chasnoff, 1989; Feig, 1991; Barth et al., 1993), that there are increasing numbers of drug-exposed babies, and that these babies present problems of great magnitude.

Data related to parenting beliefs, parenting stress, and parent-child interaction were routinely collected as part of the Great Starts intake and assessment protocol. Trained staff observers assessed program participants' parent-child interactions. Data from intake and assessment throughout each woman's participation in the program were used to provide AIA with information regarding treatment outcome and the need for continued funding of the program. The data generated on the polydrug addicted mothers participating in Great Starts was an important part of this dissertation.

The collection and analysis of comparison data, however, were not built into the Great Starts budget for the first two years of operation. In exchange for use of data from the Great Starts program in this dissertation, year one and two comparison data were collected by this researcher using the same instruments used in Great Starts. Use of a nonaddicted comparison group permitted a description of differences and similarities between addicted and nonaddicted groups on measures of parenting beliefs, parenting stress, and parent-child interaction. Comparison data also permitted the examination of the influence of the

mother's age, income level, level of education, race, number of children, and the child's prematurity status on the interrelationships among parenting beliefs, parenting stress, and parent-child interaction.

Purpose

The goal of this dissertation was to gain perspective on parenting to better (1) understand the impact of addiction on the interrelationships among parenting beliefs, parenting stress, and parent-child interaction, and (2) to compare and contrast the polydrug-addicted mother to the non-drug-addicted mother. The goal was accomplished two ways: (1) by comparing the interrelationships among parenting beliefs, parenting stress, and parent-child interaction in polydrug addicted and nonaddicted groups; and (2) by examining the relationship of the covariates: mother's income, level of education, race, age, number of children, and child's prematurity status, to parenting beliefs, parenting stress, and parent-child interaction.

Objectives

Using a correlational design, the first objective of this study was to investigate the intercorrelations among parenting beliefs, parenting stress, and parent-child

interaction in a sample of 70 women with infants and young children (up to 3 years old). A second objective was to examine the intercorrelations found using mother's addiction status (i.e. polydrug addicted or nonaddicted) as a moderator variable. The purpose of this second objective was to examine the extent that differences found in these interrelationships were a function of mother's addiction status.

A third objective was to examine the extent that differences in the relationships among parenting beliefs, parenting stress, and parent-child interaction were a function of mother's income level, level of education, race, age, number of children, and child's birth status (i.e. premature or full-term). Partial correlations among parenting beliefs, parenting stress, and parent-child interaction were compared between addicted and nonaddicted groups with these background variables partialled (held constant) to statistically control for their effects.

In this study, the variables were selected on the basis of theoretical rationale. There was a significant body of research from which the questions to be answered by this research were drawn. Particular attention was paid to those variables frequently examined and defined by other investigators. Attention was also paid to variables frequently found to be correlated in the general child development and parenting literature. In this study,

selection of control variables was further limited to variables gleaned from information collected as a matter of protocol by the Great Starts staff for their own client assessment and evaluation needs.

Research Question

The research conducted focused on the following research question:

Does mothers' addiction status (polydrug addicted or nonaddicted) moderate the interrelationships among parenting beliefs, parenting stress, and parent-child interaction when mothers' income level, level of education, race, age, number of children, and child's prematurity status (premature or full term) are partialled (held constant) to statistically control for their effects?

The pattern of interrelationships among parenting beliefs, parenting stress, and parent-child interaction is shown in Figure 1:

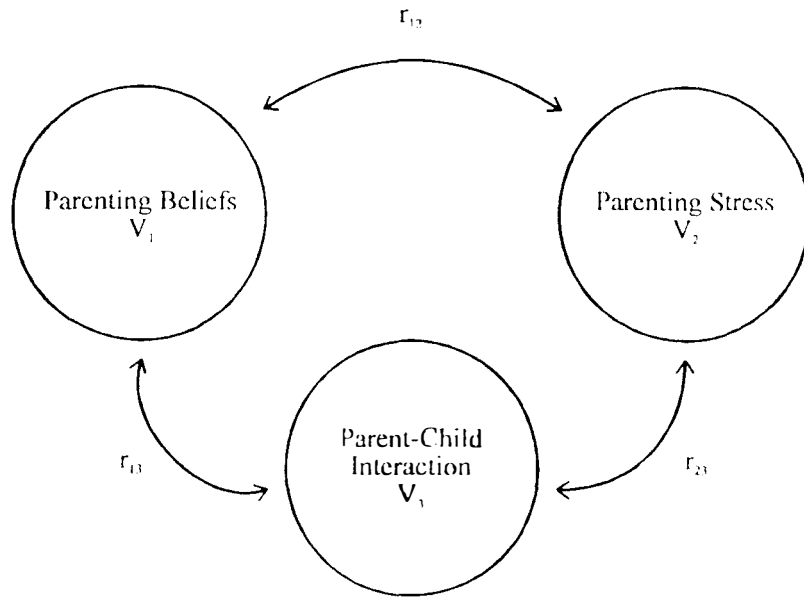


Figure 1. Pattern of Intercorrelations among Parenting Beliefs, Parenting Stress, and Parent-Child Interaction

Where:

V_1 = Parenting Beliefs

V_2 = Parenting Stress

V_3 = Parent-Child Interaction

The intercorrelations between V_1 and V_2 , V_2 and V_3 , and V_1 and V_3 are of interest in this study.

The use of partial correlation permitted the extraction of the common effects of one variable from the relationship between two other variables (Craft, 1990). It permitted the extraction of the common effects of race, for example, from the relationship between parenting beliefs and parent-child interaction. Symbolically, this example would read:

$r_{13.race}$, or the correlation between parenting beliefs and

parenting-child interaction, with mother's race partialled (held constant). In this study, partial correlation, was extended to control for six variables: the influence of mother's income level, level of education, race, age, number of children, and child's prematurity status (premature or full term) was partialled (held constant).

On a descriptive level, the research conducted also focused on the following:

1. Describing the pattern of parenting beliefs polydrug addicted and nonaddicted mothers hold.
2. Describing the pattern of parenting stress that polydrug addicted and nonaddicted mothers experience.
3. Describing the type of parent-child interaction characteristic of polydrug addicted and nonaddicted mothers.

Research hypotheses are discussed at the end of Chapter III.

CHAPTER II

THEORETICAL FRAMEWORK

Overview

Cognitive behaviorism is often suggested as a model for understanding parents and their behavior that is congruent with current approaches to understanding the complexities of parenting, and more particularly, the complexity of the parent-child system that has been affected by drugs. Cognitive behaviorism is not a single model, per se, but a collection of perspectives and therapeutic approaches each positing that cognition plays some role in the formulation of human behavior. Different results would be expected depending on which depending on which cognitive-behavioral approach is advanced within the general framework. This chapter provides theoretical support for using the cognitive-behavioral model to understand parenting and addiction. The theoretical framework provided in this chapter is presented separate from the literature review (in Chapter III) to differentiate discussion of theory from discussion of empirical findings. This chapter is structured to review the major tenets of cognitive behaviorism so that parenting beliefs, parenting stress, parent-child

interaction and maternal addiction can be conceptualized using these principles.

First there is a general discussion of parenting to provide the over-arching context of this dissertation, and then the cognitive-behavioral model is discussed. Several major theoretical orientations are based on the cognitive-behavioral perspective including the social-learning, interactionist, constructivist, and developmental models. These models are also reviewed in this chapter.

Following the discussion of the different cognitive-behavioral approaches, parenting beliefs, parenting stress, and parent-child interaction are examined using the cognitive-behavioral model as the basic structure for analysis. Of the numerous maternal characteristics, child characteristics, and situational characteristics posited in the literature to affect parenting beliefs, parenting stress, and parent-child interaction, the ones focused on in this dissertation include mother's age, race, level of education, income, number of children, and child's prematurity. Due to the dissertation sample size, parsimony was used in selecting type and number of background variables to be considered in the model presented.

Introduction to Parenting

Parenting is a complex endeavor. There is evidence that different parents experience parenting differently. This evidence has led numerous authors to investigate factors that influence parents, such as environment, race, culture, socioeconomic status, make up of family (single parent, married, divorced, widowed), educational level, number of children, or extent of family and social support. The uniqueness of each parent and each child also contributes to the differences parents experience.

Parenting may be variously experienced, but it also has several general features including nurturing, feeding and protecting the young, information transfer or socialization, and caregiving of the young (Gilbert and Rosenfeld, 1980; Sluckin and Herbert, 1986). Shuster and Ashburn (1980) suggested that parenting also involves "organizing the environment, establishing contingencies, offering opportunities for development, and serving as role models" (p. 325).

Parenting is one of the most challenging, stress-filled, crisis-oriented, difficult and important roles in our society (LeMasters, 1965; Stolz, 1967; Rossi, 1968; Duvall, 1977; Hurlock, 1978, Kach et al., 1982; Zastrow and Kirst-Ashman, 1987; LeMasters and DeFrain, 1989). It is generally believed that the way a child is parented has a

strong influence on cognitive and personality development (Laosa, 1981; LeMasters and DeFrain, 1989). Yet we offer little preparation for parenting. Subsequently, most parents enter into this role unprepared and feeling inadequate (Rossi, 1968; Gilbert and Rosenfeld, 1980; Vietze and Hopkins, 1980; LeMasters and DeFrain, 1989).

Duvall (1977) suggested that, "When parents feel inadequate, the tensions that build up are reflected in the parent-child relationship" (p. 494). Numerous authors have found a direct relationship between poor preparation for parenthood and high levels of parenting stress (Rossi, 1968; Brantley and Clifford, 1980; Snow, 1981; Kach et al., 1982; Mash et al., 1983). Even in light of the enormous amount of time and energy required of parents, parenthood is one of the most romanticized roles in our society (LeMasters, 1965; LeMasters and DeFrain, 1989). This romanticization may be due in part to the lack of preparation of many parents.

There is empirical evidence that, with the introduction of their first child to their family system, parents function as if in a crisis and high stress mode (LeMasters, 1965). Following the birth of a child, mothers often experience loss of sleep, exhaustion, confinement to the home, curtailed social contacts, and an increased household work load (LeMasters, 1966). There are also parents who do not find the role overwhelming or stressful (Schuster and Ashburn, 1980).

Amidst the complexities of the parenting role itself, there is evidence that different types of families, individuals, and environments result in different types of and approaches to parenting (Sluckin and Herbert, 1986). Sluckin and Herbert (1989) also found that "different types of parenting are rooted in different modes of life in general; that is, the mode of parenting is related to the particular ecological niche which is occupied by the given species" (p. 4). The examination of different modes of life and the different environments in which parenting is conducted include, but are not limited to, socioeconomic class differences, differences in level of education, maternal age differences, race and cultural background differences, preterm birth differences, parental mental health status differences, social support, and environmental differences (Sears, Maccoby, and Levin, 1957; Brown and Bakeman, 1980; Farran and Ramey, 1980; Field, et al., 1980; Allen et al, 1984; Moses and Buckner, 1985).

In the parenting literature, there is abundant evidence of differences in parenting practices across various individuals and groups. There is also abundant evidence of similarities within any one subculture or family: among mothers in similar communities, mothers of similar age, social position, religion, and ethnic background (Sears et al., 1957; Stolz, 1967; Duvall, 1978; Brown, 1981).

This discussion of the parenting role and of the similarities and differences of parents within and between subcultures and families provides an important context for the following discussion of cognitive-behavioral models of parenting. All too often we forget to acknowledge the variability of functioning within subgroups of people such as poor mothers, addicted mothers, and even wealthy mothers. Within each subgroup there are mothers who experience the parenting role as stressful and mothers who do not. Poor women and addicted women, however, run a disproportionate risk of experiencing or being labeled by society, the Department of Human Services, education, and health care professionals as having difficulties in their parent-child relationships.

In this dissertation, race, income, age, level of education, and number of children, are variables that are statistically controlled (held constant) when examining differences between a group of polydrug-addicted mothers and a group of non-drug-addicted mothers. This process of holding background variables constant places mothers from different backgrounds on a statistically equal playing field, and differences are assessed accordingly.

Cognitive-Behavioral Model of Human Behavior

From the 1920s through the 1960s behaviorism and psychoanalysis were the competing dominant perspectives in American Psychology (Isen and Hastory, 1982). Bell (1979) summarized the psychoanalytic view that "infantile trauma and socialization that suppressed biological urges (very largely created or transmitted by parents) cast shadows over the entire life span of the child" (p. 824). Under the psychoanalytic model, the movement of the child through the oral stages of development without significant trauma was key for successful parenting.

As other perspectives grew out of or in reaction to the circumscribed tenets of behaviorism, external as well as internal influences of behavior became the focus of childrearing recommendations.

With the recognition of cognitive influences on behavior, tenets of the cognitive-behavioral perspective offered an alternative view of human behaviors. Introduced to American psychology as early as the 1940s, cognitive behaviorism was not enthusiastically received by behaviorists who felt its variables too difficult to quantify, thus unscientific. As early as 1949, E. C. Tolman found evidence of intervening organismic variables in the behavior of rats. Tolman found that stimulus conditions alone did not account for the behavior of his subjects and

suggested that the existence of certain cognitive and conative variables also contributed to behavior.

This controversial perspective was not considered a worthwhile way to view human behavior until the mid- to late 1960s and early 70s, with the work of behaviorists such as Bandura (1965a, 1965b, 1969, 1971, 1977), Meichenbaum (1973), and Mischel (1973). A mediational perspective, cognitive behaviorism differed from the psychoanalytic and classical behavioral models by positing behavior as a response to the mental processing of external events (Bandura, 1977; Meichenbaum, 1973, 1977; McGee, 1980; Calhoun and Acocella, 1983). Information from the immediate environment, past and present, and personal or vicarious experience, was suggested to provide the building blocks for this mental processing. This mental processing was proposed to be predominantly outside of the person's awareness (Segal and Shaw, 1988). The components of this mental processing were also referred to as knowledge structures or cognitive schema. This mediational model is depicted in Figure 2.

External Stimulus -> Cognition -> Behavior

Figure 2. Cognitive-Behavioral-Mediational Model

Contrasted to the cognitive-behavioral model, traditional behaviorism focused on events in the environment that elicited and maintained behavior. Inner causes of behavior were not considered important in the behavioral conceptualization of behavior. Behaviorism suggested that a child's fate in later life depended entirely on the way he/she was raised in infancy (Bettelheim, 1987). Parents were seen as exclusively responsible for their child's long-term and immediate behavior. Subsequently, deviant behavior in adulthood was perceived as a product of the person's parent-controlled and -dominated childhood environment.

Further contrast suggests that cognitive behaviorists viewed behavior as mediated by the cognitive processes, where behaviorists viewed human beings as more passive organisms, simply responding to their environment (Bell, 1979). Again, in traditional behaviorism, the focus was on the dominant role parents played in their child's fate. According to the tabula rasa philosophy of the behaviorist Watson (1919, 1925), the newborn child was considered a blank slate upon which parents engraved what they wanted. Subsequently, the child was shaped and modified by his/her environment (Bell, 1979; Bettelheim, 1987).

Parents were led to believe that there was no room for spontaneous actions or that spontaneity was harmful (Schuster and Ashburn, 1980). LeMasters and DeFrain (1989) summarized the plight of the parent under this model as

follows: "any defects which subsequently develop are the fault of the ignorance or malice of [the child's] parents who mar what should otherwise be a perfect, or at least a perfectly adjusted human being" (p. 46). Bell (1979) suggested that this approach made parents unnecessarily wary and indecisive. Bettelheim (1987) suggested that many parents experienced stress and feelings of inadequacy when functioning under the perception of complete responsibility for the shaping of their children's fate. He further suggested that this stress and the feelings of inadequacy negatively affected parent-child interaction. In sum, it was considered virtually impossible for parents to be constantly vigilant of the environment they provided for their children without some harm being done to parenting behavior and parent-child interaction.

In response to perceived biases in the psychoanalytic and behavioral models of parenting, several authors have argued that the correlation between parental behaviors and disturbance in their children has not proven empirically to be one-to-one (Schuster and Ashburn, 1980; Fisher and Fisher, 1986; LeMasters and DeFrain, 1989). Mahoney (1984) pointed out that even "contemporary advocates of behaviorism are careful to include some respectful reference to thought and feeling processes" (p. 585). In cognitive-behavioral model approaches, parenting is not just a matter of the mother in isolation responding to a stimulus, it is the

mother and child in their environment, and the mother in interaction with the child who is also seen as a human being that also organizes sensory information (Bell, 1979; Schuster and Ashburn, 1980; Fisher and Fisher, 1986; LeMaster's and DeFrain, 1989).

There was evidence that infants and young children were aware of stimuli around them and that they learned and reacted to this stimuli (Bell, 1979; Schuster and Ashburn, 1980; McGuillicuddy-DeLisi, 1982; Fisher and Fisher, 1986), subsequently affecting parent-child interaction. It was proposed that external information was being processed through the child's cognitive apparatus (Bell, 1979; McGuillicuddy-DeLisi).

The child, as a result, is considered to be more than a blank slate upon which the parent writes; the child's cognitions are factors that act as intermediary agents between the external events and behavior (Wessler, 1987; Dobson and Block, 1988). Schuster and Ashburn (1980) depicted the idea of the existence of a cognitive domain for infants using the following examples:

A young baby who is accidentally pricked by a diaper pin may not initially know what caused the experience, but he is very much aware of it, will respond to the stimulus and may begin to associate it with other events. Pleasant experiences, such as the satisfaction of hunger also become opportunities for acquisition of knowledge.
(p.161)

Schuster and Ashburn continued their discussion of child cognitions with a definition of cognition as "the

process of obtaining and using knowledge about one's world through the use of perceptual abilities, symbols, and reasoning; it therefore includes using human sensory capabilities to receive input about the environment" (p. 162). The idea of infants having the ability to organize and conceptualize their experiences is a controversial one (Sroufe, 1979; Schuster and Ashburn, 1980; LeMasters and DeFrain, 1989). Yet authors on parenting such as Sroufe (1979), Fisher and Fisher (1986), Bettelheim (1987), and Lemasters and DeFrain (1989) continue to find evidence for the infant and young child's cognitive abilities. Schuster and Ashburn (1980), also proponents of this view, suggested that the cognitive schema of infants are "quite primitive":

Even in late infancy, babies are concerned only with manipulating their immediate environment, and their goals are short-term (e.g., how to retrieve the bottle of orange juice that has been dropped). (p.167)

Among the areas discussed above, the cognitive-behavioral model as built in the 1940s and the 1960s also involved the introduction of the theory of reciprocal influences. Parent and child were posited to be involved in parent-to-child and child-to-parent interaction, bringing into play the importance of parent characteristics and cognitions and child characteristics and cognitions in the formulation of behavior (Bell, 1979). Bell (1979) defined the basic principle underlying reciprocal influences in development as:

a moving bidirectional system in which the responses of each participant serve not only as the stimuli for the other but also change as a result of the same stimuli exchanges, leading to the possibility of altered response on the part of the other (p. 822).

Neither mother nor child was passive in their relationship with their environment or each other. The child was seen by Sroufe (1979) to be eliciting different reactions from the environment; children also differentially see, filter, interpret, and evaluate experience. Both mother and child were involved in taking in information from their environment and cues from each other, information processed through their cognitive schema on a predominantly unconscious level, and subsequently affecting the formulation of their behavior.

In sum, the cognitive-behavioral model suggests that mothers do not respond in isolation to stimulus in their environment. They are involved, instead, in a feedback system with their children and their environment that results in each impacting the other's beliefs, emotions, stress level, and behavior (Mahoney 1984; Sluckin and Herbert, 1986). Children in interaction with their mothers, adapt to their environment and roles as children by actively engaging the environment, fitting and shaping themselves to

survive in their environment, and effecting changes in the environment to satisfy needs (Sroufe, 1979).

Two further points need to be made. First, cognitive-behaviorism also assumes that cognitions are known to the individual, accessible to the individual, and can be altered (Dobson, 1988). This assumption is not wholly opposite to the idea, discussed previously, that information filtering occurs predominantly outside of the individual's awareness. Hollin and Bemis (1981) explained the differentiation between cognitive structures and processes that are within and outside of the individual's awareness as surface structure and deep structure. Surface structure is more accessible where deep structure is not as easily accessible to the individual.

The supposition that different levels of cognitions are accessible to the individual is demonstrated in the information processing approaches such as the coping and stress model proposed by Lazarus (1966, 1984) and the problem solving approach proposed by D'Zurilla and Goldfried (1971). These approaches suggest that individuals respond to situations with active and rational appraisal of their environment. D'Zurilla and Goldfried stated that "problem-solving refers to an overt or cognitive process that makes available a variety of effective response alternatives for coping with a problem situation and increases the likelihood of selecting the most effective response available" (p.

108). For example, in response to her child's crying a mother may rationally approach the situation by going through a cognitive list of possibilities as to why the child is crying. She might think, "I changed her diaper only minutes ago, she was just fed, so she's not hungry, I checked her forehead and she doesn't have a fever...but I haven't tried rocking or singing to her..."

Bell (1979) suggested that "information processing is involved in receiving and [consciously] classifying the behavior of the other participant, in comparing child behavior with standards or expectations, and in the selection of an appropriate response from the parental repertoire" (p. 822). Therefore, the same mother referred to above, might interpret her child's crying in terms of other children known to her thinking "my child fusses more than my sister's little boy," or "my child is more grouchy than her child when he wakes up from a nap." She might possibly respond with attempts to make her child conform to her view of being "good" based on what she has observed with her sister's child. She may, for example, find herself thinking, while waiting in the doctor's office, "my little girl is larger and more advanced compared to the other children her age," and proceed proudly to show other mothers in the waiting room how her daughter coos and makes sounds as if she's talking.

The second point is that there is growing recognition of the role of emotions in the formulation of behavior in cognitive behaviorism (Greenberg and Safran, 1984). Sroufe (1979) stated that "affect plays a key role in the organization of behavior" (p. 835) in his discussion of the central role of affective constructs and human development.

It is suggested that cognition influences affect, and that cognition is influenced by affect, such that each process influences behavior (Greenberg and Safran, 1984; Mahoney, 1984). It remains unclear and controversial how much of the affective process is conscious and how much is outside of the individual's awareness. The theoretical perspective positing behavior as a function of cognition and emotion is growing, and is generally accepted by a number of cognitive behaviorists, particularly those who label themselves constructivists and developmentalists. There is even heated debate in the literature over the primacy of cognition versus the primacy of affect in understanding human behavior, adaptation, and behavior change (Greenberg and Safran, 1984; Lazarus, 1984; Rachman, 1984; Mahoney, 1984; Zajonc, 1984).

Before examining parenting beliefs, parenting stress, and parent-child interaction, here is an example of the propositions of the cognitive-behavioral model of parenting: A mother perceives an event, such as her child's crying inconsolably in terms of the knowledge she possesses, i.e.,

within the constraints of her cognitive and affective structures (Bacon and Ashmore, 1986). This knowledge has been shaped by background factors including previous parenting experience, family history, age, social supports, physical health, religious involvement, etc. The experience of her child's inconsolable crying is for the most part unconsciously filtered and organized through her cognitive schema which include her attitudes, beliefs, theories, and suppositions about parenting and children. She then experiences a physiological and subjective state of arousal, and proceeds to behave/interact with her child.

The cognitive behavioral model would further suggest that the exact manner in which the mother interprets the child's crying will greatly influence how she is aroused and how she behaves. According to Mischel (1973) each interpretation produces a different emotional response and consequently a different behavioral response. For example, if the same mother says to herself, "my baby should not cry like that, she is just being a bad baby, and I shouldn't have to tell her to stop all the time," she will likely become angry. However, if she were to say, "something is wrong and I haven't figured out yet why my baby is crying. Maybe if I hold her and rock her she will be okay," she might instead feel concern, empathy, and affection.

Social-Learning Theory

By suggesting that learning and behavior change could result from the observation of a model's behavior, Bandura (1969) reintroduced the idea that behavior may work, in part, through cognitive mechanisms. In this, his social-learning (modeling) approach to behavior, Bandura suggested that the observer of a model's behavior may acquire new responses from the observation. Certain of the observer's behaviors may be inhibited or disinhibited as a result of the observation, or previously learned responses may be facilitated (Bandura, 1969).

This social-learning approach differs from the stimulus-behavior approach of traditional behaviorism in that individuals are not required to perform the behavior themselves and no direct reinforcement is necessary for learning to occur. In observational learning, cognitive representations of external events mediate situations and behavioral reactions and actions (Bandura, 1977; Black and Bruce, 1989).

Social-learning theory emphasizes that a mother defines parenting, has meanings she attaches to her role as parent, and has beliefs and expectations of herself and of her child that have each been acquired at least in part through the observation of behaviors modeled by her parents and significant others in her life. By observing her own mother, or primary female caretaker, she began to define the

parenting experience and parenting behaviors that she would eventually take as her own definitions and behaviors

Interactionist Model

The interactionist perspective in the cognitive-behavioral model also calls attention to external variables and internal processes in the formulation of human behavior. Blumer (1969) summarized the basic propositions of symbolic interactionism to include the following three premises:

1. Human beings act toward things on the basis of the meanings that the things have for them.
2. The meaning of such things is derived from, or arises out of, the social interaction that one has with one's fellows.
3. These meanings are handled in, and modified through, an interpretive process used by the person in dealing with the things he encounters.
(in Hewitt, 1979, p. 10)

Extending to motherhood this view of a person's view of "self" as something that evolves through her interaction with others, we can place in context the impact of what family, culture, and society expects of a mother. For example, many women receive the message from others that "Parenthood is great, try it, you will feel good about yourself, it's fulfilling, you will contribute to society" (Langenbrunner, 1986). Once mothers experience parenthood for the first time, they are frequently dismayed by the demands, round-the-clock responsibilities, and lack of sleep. Their insecurities and sense of unpreparedness are

heightened. There is also evidence that marital satisfaction drops with the introduction of the first baby to a family (LeMasters, 1965; Duvall, 1977; LeMasters and DeFrain, 1989).

Constructivist and Developmental Models

Recent advances in cognitive behaviorism have resulted in constructivistic and developmental models in which the person is more involved in interpreting her environment. In these models conscious cognition and emotion are more actively a part of human behavior, and there is a formal structural basis to human cognition, emotion, and behavior (Isen and Hastorf, 1982; Mahoney, 1984; Dobson, 1988). Cognitive constructs are not in a closed system but in a system that changes in the course of interaction with objects, people, and events. This line of thinking further suggests that the parenting beliefs held could be challenged by children's behaviors and responses (Hollin and Bemis, 1981).

Dobson (1988) suggested that cognitive systems in this model are "autopoietic" (i.e., self-organizing and able to change and modify self, responsive to both external and internal demands, developmental).

Cognitive Behaviorism, Parenting Beliefs, Parenting Stress, and Parent-Child Interaction

Myriad definitions of parenting beliefs, parenting stress, and parent-child interaction can be found in the parenting and child development literatures. For the purposes of this research, definitions consistent with the cognitive-behavioral model of human behavior are examined in the following discussion of these primary research variables. This section ends by similarly placing background variables in the cognitive-behavioral context, as they are posited to influence parenting. The background variables discussed include mother's socioeconomic status, level of education, race, age, number of children, and child's prematurity status.

Parenting Beliefs

Many women enter the role of parent with a number of beliefs about parenting. Beliefs, are part of mothers' cognitive schema, thus beliefs form part of the framework for how children are viewed, and subsequently, how mothers behave in interaction with their children. Azar (1986) for example, suggested that parental cognitive sets may lead to perceptions of the child as intentionally trying to harm the parent or as an inherently good child who would never purposefully try to harm the parent.

Bernard (1981) found that mothers frequently held the belief that their status in the eyes of their mothers, their families, and their communities would increase once they became parents (Bernard, 1981, Brown, 1981). Familial and/or cultural prestige are key reasons for many women in taking on the role of parent (Brown, 1981). Brown (1981) suggested that another belief a mother holds is that she will feel better about herself as a person when she becomes a mother (Brown, 1981). LeMasters and DeFrain (1989) listed 20 folk beliefs about parenthood in American society. This list included:

Rearing children is fun.
Children are sweet and cute.
Children will turn out well if they have good parents.
Children improve marriage.
If you rear them right, they will stay right.
The nature of the child being reared is really not very important; good parents can manage any child.
There are no bad children, only bad parents.
Parents are adults.
Children today really appreciate all the advantages their parents are able to give them.
Parenthood receives top priority in our society.
Love is enough to guarantee good parental performance
(pp. 21-37).

Cultural anthropologist Marie Scott Brown suggests that these particular beliefs about parenting held by women have a basis in a society's endowing the role of mother with significance or insignificance. Brown found that in societies that did not support the multidimensions of the parenting role, the motherhood role was experienced as a stress-filled one. The work of Bernard (1981) and Brown (1981) support the positing of a relationship between

parenting beliefs and parenting stress. The concept of parenting stress is discussed in the next section.

The framework or cognitive schema through which knowledge about the world is organized includes the category of beliefs (Segal and Shaw, 1988).

Parenting Stress

Stress is variously defined in the literature. Arnold (1967) defined stress as "a condition of disturbed normal functioning in which extraordinary reactions are required to overcome negative emotions, obstacles to goals, a sense of pressure and demands" (p. 10). Stress is also defined as the end product of conscious and unconscious interpretive processes suggesting that a stimulus or situation is dangerous or threatening (Conger, 1984; Appley and Trumbull, 1986). This second definition being more in line with the cognitive behavioral focus of this dissertation.

Mandler (1979) presented a cognitive definition of stress occurring "if and when the interpretative cognitive activities of the organism transform the input in such a way that a perceptible internal change results" (p. 184). He confined his definition to stress, emotional arousal, and the autonomic (fight or flight) system. Mandler's restricted view of stress was challenged by Selye (1979) who suggested that physiologically defined stress responses can occur with

no emotional arousal or appraisal. The crux of Malder's definition was that:

external stressors are effective to the extent that they are perceived as dangerous or threatening, that is to the extent that they are cognitively interpreted...and that emotional arousal is one of the most ubiquitous reactions common to a great many situations that are considered stressful. However, these emotional responses depend on psychological interpretative mechanisms (p. 184).

This definition is useful to building a case for a relationship between beliefs and stress.

Malder's definition fits the purpose of this dissertation in suggesting that the cognitive interpretive mechanisms through which events are filtered, contribute to a situation's being defined as stressful or nonstressful. A mother's belief system might suggest that as the mother of a 9 month old child she must be ever vigilant of her child to avoid an accidental fall off the bed that has no guard rails, for example. A situation arises where she has to leave the room for a moment leaving the child on the bed believed to be unsafe. This situation may be interpreted on a conscious level and autonomically experienced as stressful. This example assumes that much of the filtering of information occurs on a conscious level. Proponents of cognitive behaviorism suggest that much of the information filtering occurs outside of the individual's awareness, although conscious processes may be activated during the

filtering process and/or the course of the experience (Malder, 1979).

Brown (1981), in an anthropological view of woman's role as parent, found cultural and environmental stresses affected the time and energy that a mother had to give to her child-rearing role. Similarly, several authors have focused on stresses found in families with young children who demand significant attention and time (LeMasters, 1965; Burke and Abidin, 1980), suggesting that this is an important area of investigation.

Parents vary in their vulnerability to and tolerance of various role stressors. In his discussion of stress tolerance, Hamilton (1979) described an interaction between the distressing results of stressors, and the range of experience or behavior "beyond which there is evidence of reduced ability to cope with environmental demands" (p. 74). This suggests that some mothers of young children do not experience the stresses of the parenting experience to the degree that other mothers of young children do. There is evidence that some mothers, who apparently have the support of family, high levels of education, and access to various goods and services, may also demonstrate high levels of parenting stress. Burke and Abidin (1980), like LeMasters (1965) in their respective examinations of stress in early parent-child relationships, found that romanticization of and lack of preparation and training for parenthood, along

with socioeconomic instability and social isolation, contribute to the degree parents are vulnerable to various parenting role stressors.

Parent-Child Interaction

From the cognitive-behavioral perspective, according to Bell (1979), parent-child interaction involves "the mother using her head rather than responding mechanically as would a moth to a light" (p. 822). On a conscious level, mothers utilize information-processing skills to negotiate the parenting environment. On an unconscious level, mother's behavior is actively shaped as information is processed through her cognitive schema, including her belief systems.

Children, in the cognitive behavioral model, however, are not merely passive recipients of the administrations of their parents. This supposition of reciprocal influences involving child and parent, suggests that parent and child are individually and conjointly in motion with all interaction. Schuster and Ashburn (1980), for example, posited synchrony of interaction between mother and child as important to the child's gaining mastery over his/her environment. Early mastery, they continued, may help the child in future mastery of skills and tasks.

Stolz (1967) also described parent-child interaction as circular: "child behavior instigates parent behavior; the parent behavior, in turn, influences the child; and then the

cycle may begin again. Sometimes it is difficult to tell whether child or parent is the initiator of the sequence" (p. 288). A mother's response to her infant's behavior at any particular moment, then, is not a simple response, but one impacted by the immediate environment and formulated of her internal cognitive processes and the child's internal cognitive processes, and the individual characteristics of each including age, and previous experiences.

Sroufe (1979) highlighted the attachment relationship between mother and child as indicative of the quality of mother-child interaction as attachment is "based on reliable patterns of caregiver interaction" (p. 837). The reliability and consistency of the caregiver in providing care is an important point to consider. Taken a step further, if the infant's attachment to mother is insecure, his/her interaction with mother may be problematic. In this instance responsivity, cues, and signals may become distorted or may be interpreted incorrectly by mother, child, or both.

Because infants and toddlers comprise the children included in this sample, it is important to note that parent-child interaction involving infants is different than that involving young children up to 3 years old. The mother of a young child might typically be involved in providing directions and explanations to the child in their interaction such as "don't go near the stove, it's hot,"

"try holding your cup like this and your juice won't spill out," and more (Duvall, 1977). Conversely, the mother of the new infant is focused on keeping her infant clean, fed, and dry (Duvall, 1977).

The central developmental issue for the infant is gaining increased ability to organize behavior (Sroufe, 1979). The infant sleeps a great deal, learns to take food satisfactorily, eliminates, and gains increasing abilities for coordination of body, including arms, legs, and head. Duvall (1977) stated that the developmental tasks of mothers of infants include "mastering the skills of feeding, bathing, protecting, and maintaining a healthy, happy baby (p. 224). Mothers of infants are involved in stimulating the infant's growth and ability to organize via provision of nutrition, nurturing, comforting, conversing, and exercising the child's sensory-motor functions, i.e. seeing, feeling, tasting, hearing, and smelling (Duvall, 1977). Mothers of infants are also involved in learning the child's cues for hunger, elimination, and feeling out of control. Their response to their infants' cues, and the consistency of response contribute to the quality of parent-child interaction.

Sroufe (1979) pointed out that the central developmental issue for the 12-18 month old is exploration and mastery of the environment (p. 337). During this toddler to three year old stage, the child learns how to

adjust to other people, how to cope with limits and boundaries, continues development of communication skills, and learns how to express feelings (Duvall, 1977). The child is becoming increasingly independent of mother in exploration of the environment around him/her. Interaction, in this context, often focuses on how mother interprets this increasing independence and the degree she permits her child to face environmental challenges on its own. During this toddler period it is also common for some children to become distressed when separated from mother. This provides a context where environmental information is processed through the cognitive schema of the child, the child reacts to being left alone, even briefly, and mother-child interaction is shaped in part by the child's actions and reactions. The developmental tasks of mothers of toddlers (12 to 36 months old) include establishing feeding, sleeping, and playing routines, encouraging the child's growth and development through permitting the child to explore and experiment, providing opportunities for interaction with extended family, peers, and others (Duvall, 1977).

Background Variables

There has been a noticeable shift in the past decade from focus on the mother as the primary child socializing agent (and therefore the brunt of attacks when her child was deemed developmentally or emotionally delayed or

demonstrated other problems) to that of acknowledging the interaction of various factors on the child's subsequent development (Farran and Ramey, 1980; Field et al., 1980; Azar, 1986; Fisher and Fisher, 1986; Bettelheim, 1987). As early as 1967, Stolz recognized the influences of communication and sources on parent-child interaction and child development including books, magazines, television, friends, relatives, medical and religious persons, and teachers.

There has also been consistent acknowledgement in the literature that every mother exposed to adversity does not subsequently display disturbed parenting behavior patterns (Burke and Abidin, 1980; Solomon, 1986; Bettelheim, 1987). This point bears consideration. We have empirical evidence that not all socioeconomically disadvantaged mothers display disturbed parenting behaviors (Tulkin and Cohler, 1973; Farran and Ramey, 1980). We also have increasing evidence that the stereotyped image of all addicted mothers having disturbed parenting behaviors is not necessarily the true picture (Lief, 1985). Mondanaro (1977) and Lief (1985) both discuss evidence of protective factors that assist addicted mothers in parental functioning, including social supports in the form of extended family, high socioeconomic status, and education.

There is, however, evidence that a combination of risk factors, such as being lower-class, a minority, drug

addicted, or a teenage mother, increasingly places mothers and their children at risk for disturbed interaction, and places the child at risk for lower infant IQ and developmental scores, problems in interaction with peers, language delays, and later childhood developmental delays (Mondanaro, 1977; Farran and Ramey, 1980; Field et al., 1980; Allen et al., 1984; Azar and Twentyman, 1985; Azar, 1986; Feig, 1991). Again, a concern and goal within this examination of differences between poly-drug addicted and non-drug-addicted mothers is acknowledging inter-and intra-group differences when focusing on mothers who have inappropriate beliefs about parenting (in terms of empathy, use of corporal punishment, and role reversal), high levels of parenting stress, and who encounter difficulties in parent-child interaction.

It is this author's contention that difference does not necessarily mean deficit. Researchers must be cautious in making value-laden judgements regarding social and cultural class differences based on the results of their data. Allen et al. specified that "[socioeconomic status] differences in maternal style need not imply deficits among lower-SES mothers to support our argument" (p. 256). We must consider the mores and strictures of a mother's class, culture, economic status, level of education, and more before labeling her behavior deficient. This way of thinking is in line with the cognitive-behavioral theoretical frame upon

which this dissertation is built. With these considerations in mind, this section will continue with discussions of background variables within a cognitive behavioral framework.

Mother's Socioeconomic Status, Level of Education, Race, Age, Number of Children, and Child's Prematurity

Azar (1986) suggested that contextual factors were central to the examination of antecedent variables for understanding troubled parent-child interaction. There is evidence that combinations of background variables impact how parenting situations are perceived and interpreted, and that can provide protection against or exacerbate parenting stress and problematic parent-child interaction (Azar, 1986). Access to resources, for example, is frequently related to socioeconomic status, level of education, race, and age (Duvall, 1977; McGillicuddy-Delisi, 1982). Poor mothers run a disproportionate risk of experiencing parenting problems due to their day-to-day struggle to survive. Often overburdened and lacking resources, poor mothers spend much of their time trying to feed, clothe, and/or educate their children, leaving little time to access parenting and other resources (Duvall, 1977). Access to resources could also be hampered or enhanced by the number of children in a family. The lack of child care as support offers one functional example of this concern. A mother who

has two children in diapers and one in preschool, and difficulty finding respite child care, would have difficulty attending a community lecture on handling the issues of parenting at the local Parent Teachers Association (PTA) gathering. By missing the lecture, this mother would also be missing the opportunity to interact with other mothers, missing support and encouragement from child care and parenting specialists, and possibly missing information on the latest news in support for mothers unable to secure child care services.

Social class differences in parent-child interaction have been extensively documented (Tulkin, 1972; Tulkin and Cohler, 1973; Farran and Ramey, 1980; Allen et al., 1984). Numerous authors have suggested that poor mothers are predominantly single or estranged from their children's fathers, they are parenting under restricted opportunities and resources, and they frequently experience social isolation (Zastrow and Kirst-Ashman, 1987).

McGillicuddy-DeLisi (1982) suggested that "parents' educational level might affect parenting beliefs by virtue of greater exposure to current theoretical viewpoints associated with higher educational levels or social class" (p. 194).

Kliman and Rosenfeld (1980) suggested that parents respond to events largely under the influence of their genetics, how they were nurtured by their own parents, and

the rules and regulation of their culture. A number of authors have related differences in parent caretaking practices to the race and cultural backgrounds of parents (Field, et al., 1980; Brown, 1981; Sluckin and Herbert, 1986). Elliot Liebow (1967) argued that culture in and of itself could not explain differences in behavior among people. LeMasters and DeFrain (1989) also suggested that culture is not enough to explain the diversity found in parenting behaviors in the United States where "there is almost endless variation in behavior within families, within social classes, within the sexes, within subcultures, and so on" (p. 42).

Maternal age differences in the perception of the parenting role have been documented (Ragozin et al., 1982). McGillicuddy-DeLisi (1982) provided an interesting speculation regarding the relationship of mother's age to parenting beliefs: "age of the parent might be related to beliefs, age representing cohort differences due to shifts in popular views of child states and processes that are reflected in the media at different points in time" (p. 194). McGillicuddy-DeLisi (1982) also suggested that having more than one child affected parenting beliefs by increasing the possibility of discrepancies in parental experiences among children.

The preterm delivery of a child has been related to parenting stress and caretaking difficulties (Brown and

Bakeman, 1980; Field et al., 1980; Moses and Buckner, 1985). Klaus and Kennell (1976) found that mothers of full-term infants differed from mothers of premature infants on early interactional patterns. Mothers of premature infants accomplished the usual predictable sequence of interactions at a slower rate. They found that the prematurity of their child caused the parents significant stress and worry.

Summary

To accomplish the goal of understanding the impact of addiction on the interrelationships among parenting beliefs, parenting stress and parent-child interaction, the interrelationships themselves must be understood. To be able to compare and contrast the polydrug-addicted mother to the non-drug-addicted mother the differences between them must be understood. The previous discussion provides a theoretical framework in which to accomplish these goals. The theoretical discussion is summarized below.

Parenting does not occur in a vacuum. Mothers do not simply respond to what they feel or think in their childrearing endeavors. Mothers are information processing beings on both conscious and unconscious levels. Information is provided by the environment as well as her child. The information and cues mother's receive from their environment and their children are filtered through their

cognitive apparatus; some of the information moving to a level where conscious interpretation occurs, the rest being processed at an unconscious level.

The child him- or herself is also an information processing and organizing being. Mother and child are involved in reciprocal processes of consciously and unconsciously sending and receiving information and cues and responding.

Under the most optimal of circumstances this interactional system is a complex one. Maternal drug addiction and prenatal drug exposure upset the balance necessary for this system to work smoothly. Drugs have a physiological effect on the stimulus a child emits and on the stimulus the mother emits also. Drugs also alter a mother's ability to read and appropriately respond to her child's cues. The presence of or withdrawal from drugs and the related neurological damage and changes experience by mother and child threaten the ability of mother and child to send and receive information necessary for the child's optimal growth and development and for the mother's sense of effectiveness and satisfaction in parenting.

In sum, drugs impact the way mothers perceive their environment and their children, the ability of mothers to respond to their environment and their children's cues appropriately and effectively, and the cues they send to their children. Further, prenatal drug exposure affects the

way children perceive their environment and the cues and information emitted by their mothers. In such instances, drug affected interaction may become very stressful and frustrating for both.

Drugs are just one of a number of variables that have been posited, in the literature, to impact the interactional balance in the mother-child dyad. There is empirical evidence that the beliefs a mother holds are related to which of her child's cues she responds to and how she responds. According to social-learning theory tenets, a mother acquires a great deal of her beliefs about parenting and child development from her own mother through the modeling of behaviors and expressed beliefs. It follows then, that while interaction with her child evokes conscious and unconscious information from experiences with her own mother, beliefs, and emotions, all of which are related to the behavioral response emitted.

There is empirical evidence that stress contributes to interactional imbalance or difficulty in the mother-child dyad. Stress has been found to be related to mother's appraisal of parenting situations (Neufeld, 1976). In situations where a mother might usually be vigilant, for example, she may instead be distracted when under stress. There is further evidence that stress is related to mother-child interaction in that the effects of parental stress are transmitted to the child. As the child experiences the

transmitted effects of parental stress, the types of cues he/she emits may change.

Finally, mother child and environmental characteristics including race, income, level of education, age, number of children in the family, and/or the child's birth status (full-term or premature) also contribute to how particular beliefs about parenting or child development are reinforced, how stimuli is consciously and consciously interpreted, which stimuli is attended to, and what is interpreted or experienced as stressful or nonstressful.

CHAPTER III

LITERATURE REVIEW

Overview

The previous theoretical discussion emphasized the complexity of parental functioning and parent-child interaction from a cognitive-behavioral point of view. Considering cognitive schema and beliefs as structures through which information from the environment is filtered (at primarily an unconscious level) prior to, during, and following action and interaction, it is logical to posit a relationship between parenting beliefs and the interactions of mothers with their children. A frequently stated goal in the parenting literature is that of determining the antecedents that trigger and maintain healthy or disordered parental behavior (Azar and Twentyman, 1985; Azar, 1986). The antecedents explored include personal characteristics, cognitions, and situations of parents. Cognitive behavioral theoretical reasoning suggests that what mothers believe influence parent-child interaction.

This line of reasoning can be reasonably extended to include parenting stress, a factor that has physiological, cognitive, and behavioral implications for parental functioning. Stress can result in restricted-sensitivity or

hypersensitivity (at the cognitive level) to cues from the child and broader environment, for example, subsequently affecting parent-child interaction. Extending the above logic suggests that what parents believe can be influenced by stress and that stress influences parent-child interaction.

This literature review builds upon the theoretical discussion with an examination of the various ways researchers have conceptualized and measured relationships among three variables: parenting beliefs, parenting stress, and parent-child interaction. This discussion also focuses on the previous research results and their implications for examining the variables in the context of drug-affected parenting.

A secondary focus throughout this chapter is on tendencies in the literature to generalize trends found in subgroups of drug-addicted women to the entire population of drug-addicted women. It is suggested here that generalization without consideration of socioeconomic, class, and age factors found to make a difference in behavior in the general population, could be costly (Reed, 1985; Azar and Twentyman, 1986). The cost may be that of programs built on delimited findings from delimited characterizations of drug-addicted mothers resulting in inappropriate treatment and other intervention strategies.

This chapter begins with discussions of parenting

beliefs and parenting stress in non-drug-affected and drug-affected contexts. Because the bulk of the studies on parenting beliefs focus on the relationship between parenting beliefs and parenting behaviors, these variables are discussed conjointly. This discussion is followed by a discussion of parent-child interaction in the non-drug addicted and drug-addicted contexts. Patterns of parenting of drug-addicted mothers found in the literature are examined as well as behaviors related to drug procurement and use that affect parental functioning and parent-child interaction. Background factors including race, income, level of education, and family size, are discussed as they affect parental functioning and parent-child interaction. Methodological issues in the literature are also reviewed. Finally, the research question is reiterated and the hypotheses of this dissertation are presented.

Parenting Beliefs

In the literature reviewed, the examinations of parenting beliefs focus on dimensions consistent with themes of acceptance versus rejection, degree of closeness, parental intrusiveness, degree of parental control, authoritarianism versus democracy or leniency, and corporal punishment versus alternative forms of discipline (Rickard et al., 1984; McGillicuddy-DeLisi, 1975; Kochanska, 1990;

Sigel, 1992). The dimension of acceptance versus rejection involves how much the mother invites or avoids closeness with her child. The degree of intrusiveness involves how much autonomy the parent permits in her child, how much the parent monitors her child's bodily functions, and extends to the use of emotional blackmail such as "If you do what I ask I will love you forever," to physical spankings or worse (Fisher and Fisher, 1986). The dimensions of authoritarianism versus democracy or leniency and corporal punishment/discipline involve parental beliefs about how firm or lax parents should be about enforcing rules, and beliefs about how much children are obliged to follow the rules set down for them.

In the literature the primary purpose for focus on maternal beliefs about children and child development has been the evaluation of the impact of parenting on child development (i.e. physical, social, and emotional) (McGillicuddy-DeLisi, 1985). Subsumed within this perspective is the idea that mothers hold beliefs about parenting and child development and capabilities that are unconsciously tapped while they interact with their children. It is also suggested that distorted parenting attitudes/beliefs regarding the needs of infants and children, the role of parent, and child development are causally linked to troubled interactions. These ideas are consistent with the information processing view in cognitive

behaviorism. As mothers interact with their children aspects of that interaction are, at primarily an unconscious level, processed through the mothers' cognitive structure which include the beliefs they hold.

Parenting Beliefs and Parenting Behavior

Several authors have suggested that the link between the expressed beliefs mothers hold about parenting and their actual parenting behaviors remains an illusive one (Sigel 1985, 1992; Mash and Johnston, 1990). Sigel (1992) stated that:

for those of us who study parent beliefs as predictors of parent actions, the success rate for uncovering robust findings between stated beliefs and overt actions has been disappointing. Although it seems reasonable to contend that what a person believes guides his or her actions, the empirical data do not provide the kinds of information that support this conviction (p. 433).

Gordon (1957) used a 12-day residential camp for pre-school deaf children and their mothers as a setting in which to gather attitudinal information and to conduct intensive behavioral observations. Maternal attitudes and beliefs were measured on dimensions of possessiveness, dominance, and ignoring, using the University of Southern California Parent Attitude Survey (PAS) (Shoben, 1949). The ultimate goal of the study was to rank each mother according to the likelihood that her attitudes and behavior toward the child would result in the child becoming a problem child. Twenty

one mothers were involved without any comparison families. Using Kendall's tau, a nonparametric measure of association, Gordon found that the mothers' scores on the attitude scale did not agree with staff observers' evaluation of mothers' attitudes and behavior toward their children. With correlations ranging from $-.01$ to $.16$, he concluded that in this sample parenting attitudes were not correlated with rankings of parenting behaviors.

Gordon suggested that the reason for these results might be that the attitude survey instrument itself (Shoben, 1949) lacked validity and needed further validation. He argued that the observation data should be considered a reliable and adequate criterion measure due to interrater agreement and the intensiveness of the periods of observation over a number of situations. He did not, however, examine possible confounding between measures. It seems possible that by using one score composed of ratings of mothers' attitudes and behaviors toward their children, relating it to another attitude score would make it difficult to discern differences between the effects of attitude and the effects of behavior on the children's development. The fact that two measures that included attitudinal items were not correlated does suggest problems with validity.

Zunich (1961) tested the hypotheses that "maternal attitudes toward childrearing are significantly related to

selected behaviors of mothers, observed in interaction with their children; that maternal behavior is independent of social class; and that maternal behavior is independent of the sex of the child with whom the mother interacts" (p. 231). Eighty white homemaker mothers of 2 to 5 year olds (40 lower-class and 40 middle class), were observed for 30 minutes in the Child Development Laboratories at Texas Woman's University and Florida State University. Zunich measured maternal attitudes during a structured interview using the Parental Attitude Research Instrument (PARI) (Schaefer and Bell, 1955). Of 544 comparisons made between 17 maternal behavior categories and 16 attitude subscales, using Spearman rank correlation coefficients, 16 relationships were found to be significant at the .05 level or beyond. The attitude of approval of activity was related to attentively contacting and observing, avoidance of communication was related to restricting and remaining out of contact, breaking the will was related to directing and restricting behavior, attitudes of comradeship and sharing were related to helping and teaching behaviors, attitudes about encouraging verbalization were related to contacting and helping, and egalitarian attitudes were related to contacting, helping, and teaching.

Brody (1965) in her examination of the relationship between maternal attitudes and behavior in a sample of 50 mothers of preschool children, found evidence to support a

relationship between expressed maternal attitudes toward childrearing and seven of 15 observed maternal behaviors (as observed in an experimental situation). The group was racially homogeneous (white) and varied slightly on income and education. Brody measured Parental attitudes and beliefs using the PARI (Schaefer and Bell, 1958) and the Maryland Parent Attitude Scale (MPAS) (Pumroy, 1960). She divided the mothers into two groups based on their PARI and their MPAS scores (high and low score groups).

Dimensions on the PARI measured the degree mothers agreed with authoritarian, hostility-rejection, or democratic approaches to parenting. Dimensions on the MPAS measured the degree mothers agreed with disciplinarian, rejecting, indulgent, or protective approaches to parenting. Mother-child interaction was observed and rated during a 30-minute unstructured play session. Behaviors measured including attending, forbidding, criticizing, interactive play, responding, helping, praising, teaching, questioning, compliance and structurizing. Brody concluded that some behaviors are more salient to particular measured attitudes and other behaviors are more peripheral. This suggests that the operationalization of attitudes, beliefs, and behaviors has an important impact on study results.

Mannino et al. (1968) cited only five studies in the literature that dealt with the specific link between parental attitudes and behavior with little supporting

empirical evidence. Holden and Edwards (1989) cited 12 studies testing the links between parental behavior and attitudes as assessed by parent-child rearing attitude scales (Shoben, 1949; Gordon, 1957; Zunich, 1961; Brody, 1965; Baumrind, 1971; Beckwith, 1971; Radin and Glasser, 1972; Tulkin and Cohler, 1973; Endsley et al., 1979; Easterbrooks and Goldberg, 1984; Egeland and Farber, 1984; Rickard et al., 1984). Several of the studies reviewed by Mannino et al., and Holden and Edwards are reviewed in this discussion as well as six other studies (Leeper, 1983; Conger et al, 1984; Kochanska, 1990; Sigel, 1992).

Mannino et al. (1968) were partly successful in demonstrating a relationship between expressed attitudes and observed behaviors in a sample of 26 mothers and 26 fathers observed interacting with their adolescent sons. The demographic makeup of their subjects is not clear. The authors correlated scores on the PARI (Schaefer and Bell, 1958) with rankings in categories of behavior including: suppressive, punitive, restricting, dominating, bossy, dogmatic, weak, compliant, submissive, sharing, agreeable, congenial, attacking, critical, and controlling. The behaviors of the families were observed during a structured family task of completing a questionnaire. The results suggested that for mothers democratic attitude (sharing, comradeship) was closely related to observed cooperative behavior (agreeable, congenial, compliant). The authors did

not provide \underline{r} or \underline{p} values for their findings.

In her study of the relationship between attributes of mothers and their infants' IQ scores, Beckwith (1971) measured maternal beliefs about parenting using the PARI (Schaefer and Bell, 1958) and behaviors during two in-home observation sessions. Mother and baby were observed during feeding, bathing, and putting to sleep activities. The subjects included 12 adoptive mother-infant dyads and 12 natural mother-infant dyads. Beckwith found mother's socioeconomic status significantly correlated with three aspects of parenting attitudes: 1) that the parent is the boss to whom the child should submit and deify ($\underline{r} = -.52$, $\underline{p} < .01$); 2) that the mother's place is seen as in the home ($\underline{r} = -.43$, $\underline{p} < .05$); 2); and 3) that the child's sexual and aggressive impulses should be suppressed ($\underline{r} = -.18$, $\underline{p} > .10$). She also found statistically significant relationships from $\underline{r} = .41$ to $\underline{r} = .78$ at $\underline{p} < .05$ and $\underline{p} < .01$, between mother's attitudes and beliefs and mother's behaviors in both groups.

Examining the relationship between certain authoritarian attitudes among mothers and mother-child interactional behavior in a sample of 40 mother-child nursery school and day-care center dyads, Endsley et al. (1979) hypothesized that "the more parents espouse authoritarian views of: (a) intolerance of ambiguity and (b) seeing themselves as the primary source of knowledge and power over their children, the less they would engage in

behaviors intended to encourage their children to act curiously" (p. 332). The authoritarianism measure was significantly negatively correlated with the frequency mothers oriented their children to be curious ($r = -.37$, $p < .05$). These results indicated that "the more authoritarian the mothers, the less positively they behaved toward their children, the less often they oriented their children to explore, and the less often they interacted with their children" (p. 338).

Consistent with the cognitive-behavioral underpinnings of this dissertation, Rickard et al. (1984) suggested that parental knowledge of child development norms and effective child management techniques influence parental interpretation of a child's behavior. Rickard et al. found that maternal beliefs about discipline (e.g., ignoring, "time-out") and knowledge of child development norms were significantly related in two groups of mothers. The authors studied the differences between 16 psychological-clinic-referred mother-child dyads and 88 non-clinic-referred mother-child dyads on maternal expectations, attitudes, and beliefs about parenting and mother-child interaction. The Maternal Expectations, Attitudes, and Belief Inventory (MEABI) was used to assess patterns of maternal beliefs about child behavior and development. Observations of normal unstructured parent-child interaction were made in the subjects' homes by naive student observers.

The authors found that mothers' beliefs about discipline were correlated with their behavior (e.g., praising, allowing, spanking, correcting and reasoning) with correlation coefficients ranging from $-.21$ to $.41$, and p 's $< .05$. Socioeconomic status (SES) was related to maternal behaviors (praise, spank, and reason) r 's ranging from $.19$ to $.25$, and p 's $< .05$, and mothers' marital status as related to parenting behaviors (praise and reason) r 's = $.18$ and $.19$, p 's $< .05$. The authors found that differences in beliefs about disciplinary techniques in the research and comparison groups could be detected using paper-and-pencil inventory and nonstructured naturalistic (in light of the intrusiveness of an observer in the home) observational techniques.

McGillicuddy-DeLisi (1985) found no relationship between parenting beliefs and behaviors in her study of parental beliefs and children's cognitive level of functioning. In a sample of 122 families with preschool age children, parenting beliefs about child development were obtained during interviews using a protocol developed specifically for this study. Parent-child interactions during storytelling and paper-folding tasks were videotaped and coded for parents' use of distancing strategies, positive and negative emotional supports, child management behaviors, nonverbal helping or takeover behaviors, and information feedback to the child.

Using zero-order correlation coefficients between the variables, McGillicuddy-DeLisi found parenting beliefs were positively related to mothers' level of education. She suggested that this finding was consistent with higher education being associated with social class and access to various information on child development and parenting. She further suggested that the availability of information and subsequent awareness of different approaches to parenting resulted in an assimilation of these approaches into one's belief system, i.e., "education affects beliefs" (p. 21).

The finding of a relationship between parenting beliefs and level of education was also consistent with speculations in the literature that maternal behaviors may have less to do with mothers' beliefs than knowledge about her child that she gains directly from her experiences with the child (Rickard et al., 1984; Sigel, 1985, 1992). This suggests a constructivist and developmental model of maternal behavior as discussed by Isen and Hastorf (1982), Mahoney (1984), and Dobson (1988). Mothers, under the tenets of this cognitive-behavioral model perspective, are more involved in interpreting their involvement with their children than the traditional view of stimulus being interpreted at a primarily unconscious level. During her involvement with her child, then, a mother is able to organize her cognitions, change, and modify self and her response to both external and internal demands. She is, as a result, in a

constant state of development and change in response to her child and their interaction. A logical extension of this perspective supports the speculation that maternal behaviors may have less to do with mothers' beliefs than knowledge about her child that she gains directly from her experiences with the child.

Kochanska (1990) in a study of maternal beliefs as long-term predictors of mother-child interaction involving 20 normal and 36 depressed mothers, "focused on two kinds of parental beliefs: endorsed rearing philosophy (authoritative-authoritarian dimension) and affective attitude toward child (positive-negative affect dimension)" (p. 1934). Using hierarchical multiple regressions to examine maternal beliefs as predictors of long-term maternal behavior, Kochanska found that "maternal authoritative attitude predicted only one maternal influence strategy: for normal mothers only, endorsement of an authoritative attitude predicted frequent use of positive incentives. No relation was found for depressed mothers" (p. 1938). No relationship was found between mothers' attitude and later observation of resolution of mother-and child-initiated control episodes.

Maternal behaviors were operationalized as maternal influence strategies i.e. direct commands, indirect commands, positive incentives, and prohibitive interventions. Using the Block Childrearing practices

Report (1981) she found support for the hypothesis that maternal beliefs were accurate long-term predictors of mother-child interaction. Using hierarchical multiple regression she found that when authoritative attitude was entered third into the equation for predicting maternal influence strategies, $R^2=.23$, (3, 52). When affective attitude was entered fourth into the equation for predicting maternal influence strategies, $R^2=.24$, (5, 51). Her results confirmed her hypothesis of a relationship between parenting beliefs and parent-child interaction, and suggested that mothers who endorsed authoritarian attitudes used frequently prohibitive interventions with their children.

Mash and Johnston (1990) while supporting a relationship between parental cognitions, affect, and parenting behavior, also suggested that it is not guaranteed that a mother will think and act in accordance with her belief "if confronted with a stressful and arousing situation such as her child spilling ketchup on her white dress as she is about to leave the house for an important job interview" (p. 322). Conversely, when presented with descriptions of hypothetical incidents of child aggressive and withdrawn behaviors, Waterloo (1990) found that in a sample of 122 mothers and 67 fathers of four-year-olds parental strategies for dealing with the child's behaviors were related to both beliefs and the socioecological

circumstances.

Mills and Rubin (1990) conducted a study to assess parents' beliefs about aggression and social withdrawal in children. The study involved 122 mothers and 67 fathers of four-year-olds recruited from 18 preschools and day-care centers. Fathers were used as a comparison group in some instances. The authors grounded their approach in cognitive-behavioral theory, suggesting that parents' "information processes may guide reactive parental behaviors" (p. 139). They also hypothesized that emotional responses are connected to the parenting beliefs held. They hypothesized that the choice of strategies for dealing with aggressive and withdrawn behaviors was related to both the beliefs parents held and the socioecological circumstances of the parents (e.g. degree of stress and social support).

Because this dissertation focuses on mother-child dyads, this review highlights Mills' and Rubin's findings for mothers only. Beliefs were measured using parents' responses to hypothetical incidents of aggression and withdrawal. Parents were asked how they would feel seeing their child act that way, why, and what they would do about their child's behavior. Reports of positive and negative life events were used as indexes of stress parents were experiencing.

Concern was the primary emotion mothers reported in connection with the aggressive child behavior variable,

disappointment was the secondary emotion. Withdrawal behavior elicited concern and puzzlement as the primary emotions. Mothers believed that aggression and withdrawal were due mostly to transient states, acquired habits, and age-related factors. The mothers believed that age-related factors were the reasons behind aggressive and withdrawn child behavior. This belief was the only maternal belief significantly affecting the type of behavior demonstrated by the children (aggressive or withdrawn), $F(1,120) = 9.81$, $p < .002$.

The mothers reported that they would use moderate and high power techniques (more negative and coercive) to deal with aggressive behavior in their children, and low-power techniques to deal with withdrawal (less directive techniques) with F 's(1,120) ranging from 28.15 to 111.63, and p 's from $< .06$ to $.001$. The choice of high-power strategies for dealing with aggressive behavior was significantly predicted by the interaction of occupational status and perceived support, $R=.39$, $F(1, 113) = 20.23$, $p < .001$. These results suggested that "high-power strategies were most likely to be suggested by mothers low in occupational status and reporting a low level of social support." (Mills and Rubin, p. 146). In sum, Mills and Rubin found a relationship between parental beliefs and socialization strategies and strategies and life circumstances under which parenting occurs.

The authors found significance in spite of the concern in the literature that what parents report their behaviors would be in response to child-based stimulus, may not reflect their actual behavior, particularly given the circumstances at the time (i.e., the level of stress and/or support) (Sigel, 1992). They did not discuss their findings in light of this concern. This suggests the need for replicating their study to compare parenting beliefs with the results of observations of parenting strategies in response to demonstrated child aggression and withdrawal. Comparisons of findings from an observational study and this previous study would shed some light on differences in what parents report their behavior would be and their actual observed behavior.

Sigel et al. (1991) hypothesized that parents' teaching behaviors and parents' beliefs about children's acquisition of representational systems (i.e. symbolic thought) contributed to children's representational competence. The sample was composed of 40 families of non-communication-handicapped children. The families were intact (i.e., both parents in the home), white, middle-class, college-educated, and professionally employed. Parenting beliefs were obtained during an interview using vignettes about how children learn. The interview information was coded into one of four categories: 1) beliefs that children learn from thinking and reasoning; 2) beliefs that children learn,

instead, via direct instruction (i.e., by being told, lectured at, and receiving information from adults); 3) beliefs that children learn from receiving positive feedback about their behavior; and 4) beliefs that children learn from being punished for their behavior. Parenting behavior was measured in two ways: 1) during an interview about parents' teaching strategies including distancing from child to force the child to think or reason through a situation, providing rational explanations, giving direct orders, bribing or punishing the child in order for the child to learn; and 2) observing mothers involved in teaching their children how to tie square and bow line knots.

Sigel et al. found relationships between parenting beliefs and self-reported parent teaching behaviors, r 's ranging from $-.60$ to $.72$ and p 's from $<.05$ to $<.001$, but no relationship between parenting beliefs and observed parent teaching behaviors. Parents with beliefs that children learn through thinking and reasoning reported that distancing strategies should be used to teach children. Evidence of relationships among parenting beliefs, observed parent behaviors, and child outcomes were, however, unclear. Sigel et al. suggested that direct relationships were not clear because beliefs may be expressed through more than one behavior and affected at the same time by sample characteristics (e.g., parents' gender, socioeconomic level, education).

In conclusion, Sigel et al. suggested that relationships between beliefs and behaviors may not be one-to-one, thus would be difficult to detect unless they share a common context as in the case of using interviews to obtain information on beliefs and self-reported parenting behaviors. In analyzing the results of this study Sigel (1992) suggested that "the greater the overlap between the knowledge domain of the belief and the task to be taught or learned, the greater will be the relationship [between these two variables]" (p. 453).

Parenting Beliefs of Drug-Addicted Mothers

Mondanaro (1977) found that pregnant heroin addicts (N=60) had unrealistic attitudes and expectations about their pregnancies and subsequently about their children. The mothers in her study perceived their irritable and difficult to cuddle drug-exposed infants as rejecting and emotionally distant. The mothers, in turn, placed emotional and physical distance between themselves and their infants in response to feeling rejected. This response to perceived rejection by her child resulted in the mothers' being cold, indifferent, and distant while interacting with their children. Mondanaro's characterization suggests that the cognitive processing of cues from her child are important to the way the addicted mother interacts with her child. Mondanaro's research was not grounded in cognitive-

behavioral theory and the focus did not go further in examining the relationship between mothers' beliefs and behaviors. The importance of this relationship, however, was implicit in Mondanaro's work.

Observed during a methadone maintenance regimen, addicted mothers were observed to expect their children to develop quickly in areas such as toilet training and self-control. Mondanaro reported:

When mothers bring their toddlers to the methadone clinic, they rarely provide them with any toys or stimulating encounters. Rather, the children are expected to sit quietly while mothers socialize and wait for their methadone (p. 65).

Numerous authors have similarly concluded that drug-addicted mothers have inappropriate beliefs and expectations about their children's abilities and development (Carr, 1975; Wellisch and Steinberg, 1980; Conger et al., 1984; Ahart et al., 1991). No study was found, however, that addressed the socioeconomic and cultural ramifications of these beliefs about child development and expectations of children. Because women in most of these studies are poor, it is suggested here that playing may be irrelevant to survival and the ability for self care at early ages may be more relevant to survival, thus valued more by the drug-addicted mother. The chances for misinterpreting the parenting beliefs and expectations of drug-addicted mothers increase greatly when racial, socioeconomic, educational, and other background variables are not considered. A mother who is

compelled to survive in an oppressive, racist, socio-economically depressed situation, for example, is sure to interact differently with her children when compared to mothers rearing their children in less emotionally and physically challenging situations. Whether or not there are significant differences in the beliefs held by mothers from these different situations remains empirically controversial.

Using an intergenerational cycle of addiction theory based on social learning tenets of modeling and reinforcement, Bauman (1980) found no difference between 15 methadone-maintenance mothers with preschool-age children and 15 non-drug-addicted mothers with preschool-age children on parenting attitudes as measured by the Parental Attitudes Questionnaire (PAQ) (Baumrind, 1974). She did find differences in parenting behaviors between the two groups, suggesting that the immaturity, self-centeredness, lack of self-discipline and impulsivity of the drug-addicted mothers in her sample were related to the difficulty they had in relating to their children and the fact that their children also had short attention spans and were impulsive.

Bauman suggested that the maternal behaviors measured:

may have been in response to the children's aversive behaviors rather than vice versa. Non-drug-addicted mothers also may have manifested more aversive behaviors and fewer pro-social behaviors if they were interacting with children who displayed aversive behaviors or who were developmentally and mentally slower as were the children of methadone-maintenance mothers (p.44).

In finding disparity between parenting attitudes and parenting behavior in the group of drug-addicted mothers, Bauman surmised that they were "cognizant of adaptive childrearing attitudes" (p. 43). She dismissed the measured attitudes as resultant of invalid measurement of parenting attitudes because the attitudes didn't reflect her finding that the drug-addicted mothers exhibited higher rates of commanding, disapproving, provoking, and threatening behaviors with their children than the non-drug-addicted comparison mothers.

Using a fairly stringent matched comparison group design Bauman bypassed analysis of the effects of background variables such as mothers' race, level of education, marital status, income, age, and number of children on parenting belief and parenting behavior scores. Each group was composed of 38 White, 11 Black, and 21 Hispanic mothers. There was no indication of the degree of differences in parenting belief and parenting behavior scores between the three racial groups. Absence of information regarding the effects of background variables was not unique to Bauman in this review of the literature. This gap in the literature points to new avenues of exploration and expansion of our knowledge in research designs and data analysis with populations of drug-addicted women and their children. The need to expand to consideration of the effects of mothers' race, income, age, level of education, and number of

children is addressed in this dissertation.

Dismissal of the results of the parental attitudes measures as a possible response set (Cook and Campbell, 1967) is too simplistic. Bauman's (1980) finding of discrepancy between parental attitudes and behavior in her sample of 15 drug-addicted mothers is, however, consistent with a growing assumption in the cognitive-behavioral literature that the beliefs mothers hold that are most strongly related to their parenting behaviors may not be accessible via paper-and-pencil inventory. For example, A group of mothers from various socioeconomic, educational, and family backgrounds may happen to hold similar beliefs about parenting and child development, but there may be significant discrepancies in their parenting behaviors. At the same time, there might be consistencies in the behaviors of a group of diverse mothers who hold very different parenting beliefs (Mahoney 1984a, 1984b).

In a study similar to Bauman's 1980 study, Bauman and Levine (1986) compared 70 drug-addicted mothers of preschool-age children and a matched group of 70 non-drug-addicted mothers of preschool-age children on measures of intelligence, personality, parenting beliefs, and parenting behaviors. Using the California Psychological Inventory (CPI) (Gough, 1975) and the Parent Attitude Inquiry (PAI) (Baumrind, 1971) to measure parenting beliefs and attitudes, they found that in comparison to the comparison group, the

drug-addicted mothers scored significantly lower on measures of parenting attitudes and beliefs and performed more poorly on measures of parenting behaviors. The mean scores of the drug-addicted mothers on both measures were higher than the non-drug-addicted mothers on authoritarianism, conformity, firm enforcement, making demands, disapproval, and humiliate.

Consistent with the goals of their study, Bauman and Levine reported correlations between mothers' overall aversive behaviors and children's overall aversive behaviors ($r = .67, p < .001$); mothers' aversive behaviors and children's IQ scores ($r = .26, p < .002$); and mothers' and children's IQ scores ($r = .54, p < .002$). The authors did not, however, examine correlations with nor control for the effects of mothers' race, level of education, income, age, or number of children.

Bauman's finding of inconsistency between attitude and behavior was also consistent with Mondanaro's (1977) suggestion that problems demonstrated by the drug-exposed child may be interpreted as purposeful rejection by the drug-addicted mother, who withdraws from interaction with her child as a protective response to the rejection. In light of the cognitive-behavioral model, Bauman's and Mondanaro's findings can be extended to the possibility that the drug-addicted mother may indeed hold appropriate parenting beliefs while demonstrating deficits in parenting

behaviors and parent-child interaction because the very interaction she is involved in contributes significantly to what her actions are.

The drug-addicted mother views her child as a possession, according to Bushong (1990). As a possession the child functions to meet the mother's own needs and demands as opposed to having needs of its own that supersede the mother's needs. This characterization of the drug-addicted mother's view of her child can be logically extended, using tenets of the cognitive-behavioral model of human behavior, to suggest that the drug-addicted mother may believe that her child, as her possession, should meet her need for a compliant, quite, unobtrusive, nurturing child. Mondanaro (1979) similarly suggested that the drug-addicted mother believes that the child should function as her nurturer.

Parenting Stress

Parenting is a demanding and challenging role that is often susceptible to stress (Garbarino, 1976; Egeland et al., 1980; Conger, 1984; Mash and Johnston, 1990; Pianta and Egeland, 1990; Webster-Stratton, 1990). Stress in a family system can accrue from a variety of sources including maternal drug addiction and its related consequences (Davidson, 1991; Barth et al, 1993); financial difficulties

related to unemployment and underemployment, marital discord, and a family history of maltreatment (Azar and Twentyman, 1986; Feig, 1990, 1991; Shikles, 1990), or the presence of a premature, a sick, a physically or emotionally challenged, or a developmentally delayed child (Abidin, 1983; Moses and Buckner, 1985); family violence, trouble with law enforcement, or homelessness (Davidson, 1991). It is frequently pointed out that stress is not found in all situations where one or more of these problems occur (Azar and Twentyman, 1986).

When experienced by parents, stress is proposed by a number of authors to negatively impact parent-child interactions, particularly in the area of positive and mutually satisfying interactions (Abidin, 1983; Azar and Twentyman, 1986; Abidin and Wilfong, 1989; Mash and Johnston, 1990 p. 313). Azar (1986) suggested that "impulse control problems and inappropriate beliefs about children also may contribute to the disturbed interaction patterns observed in [maltreating] families" (p. 354). Davidson (1991) suggests that changes in levels of stress in families can result in change from warm, accepting, available, affectionate, and responsive patterns of parenting, to cold, critical, unavailable, and unresponsive patterns of parenting. Stress can result in parental insensitivity to some cues from the environment and/or child and overreaction to others because of narrowing of attention or stimulus

overload (Belsky, 1984; Deaux and Wrightsman, 1984).

Reduced or hypersensitivity to cues is how human beings cope with environmental and/or parenting stress.

To cope with stress and continue to function, parents might narrow their focus to factors most salient to immediate parent-child survival needs, shutting out other factors. At other times parents might limit the kinds and amount of information taken in to prevent information or stimulation overload (Deaux and Wrightsman, 1984). Other factors found to mediate the degree stress affects parents and parent-child interaction include the availability of resources for coping (familial and social support), cognitive appraisal of the situation or environment, and prior experience with the stressor (Conger et al., 1984; Deaux and Wrightsman, 1984; Appley and Trumbull, 1986).

Given that both types of mother-child dyads in this dissertation (polydrug addicted and non-drug-addicted) are susceptible to stress due to the very nature of parenting, differential manifestations of stress were hypothesized to be evident due to the moderating role of addiction status. It followed, then, that the interrelationships among parenting beliefs, parenting stress, and parent-child interaction would also be moderated by mother's addiction status.

Parenting Stress and Maternal Cognitions and Beliefs

Several authors have investigated the relationship between stress and the quality of parent-child interaction as mediated by maternal cognitions, attitudes, and beliefs (Conger et al., 1984; Mash and Johnston, 1990). The results of these studies are of particular interest to this dissertation because of support for posited relationships among attitudes, beliefs, stress, and behaviors in the context of parenting.

Stressful life situations and events are generally considered detrimental to the successful fulfillment of parental role responsibilities. Viewed on cognitive and behavioral dimensions, levels of stress have been related to hostility, anger, irritability, and mistrust of or alienation from intimates, including one's children (Conger et al., 1984). Conger et al. (1984) hypothesized that the relationship between maternal behavior and environmental stress was partially mediated by parenting attitudes. In a sample of 74 abusive and nonabusive families Conger et al. operationalized chronic stress using demographic variables including "financial stress (income and dependence on public support), family structure (number of children and single-parent head of household), past events that may be associated with continuing stressful life conditions (educational achievement and mother's age at first birth)" (p. 2235). Parenting attitudes were operationalized as the

degree mother agreed with authoritarian childrearing values on a four-item scale. The maternal attitude scale focused on "mothers' beliefs that children should be firmly punished, should respect and obey their parents, and should behave well even as babies" (p. 2238).

Using correlation analysis, Conger et al. found that maternal cognitions did mediate environmental stress. Decreased levels of positive parent-child interaction were related to increasing environmental stress, i.e., public assistance ($r=.23$, p not specified), and number of children ($r=.16$, $p > .05$). Parent-child interaction was inversely related to decreasing stress, i.e., income ($r=-.30$, p not specified), education ($r=-.53$, p not specified), age at first birth ($r=-.37$, p not specified), number of parents ($r=-.51$, p not specified). Conger et al. did note that not all of their subjects who were living under stressful life conditions demonstrated risk for problems in parent-child interaction. This consideration is consistent with concerns of this author that blanket generalizations that poor or minority mothers demonstrate poor parenting-practices be avoided. It is suggested, rather, that our empirical efforts move toward understanding vulnerabilities to stress within groups of parents.

In their theoretical discussion of parent-child interactive stress in families of hyperactive children and families of physically abused children, Mash and Johnston

(1990) suggested that "some types of maternal cognitions may serve to generate or exacerbate interactional stress, whereas others may serve to reduce or prevent it (p. 315). The authors defined stress in parent-child interaction in terms of degree of social support, quality of the marital relationship, quality of child characteristics including temperament, cognitive and physical attributes, and behavior problems, maternal cognitions, behavioral repertoires, health status, emotional state, and previous experiences. Maternal cognitions were defined in terms of cognitive structures such as attitudes and beliefs, filters through which environmental and child related information is interpreted.

Parenting Stress and Parent-Child Interaction

Parenting stress and its relationship to parenting behavior and parent-child interaction has been defined and measured in the literature in a number of ways. Stress has been linked to parent-child interaction from studies conducted on families who suffered through the London Blitz during World War II where mothers' anxiety and stress level was highly correlated with anxiety and stress symptoms in their children (in Bettelheim, 1987), to more recent studies such as Solomon's (1986) study of stress in mother-child dyads following the Three-Mile Island incident (Eastern Pennsylvania, U.S.A., March 28, 1979). These studies also

suggest a link between symptoms of anxiety and stress in mothers and in their young children.

In their study of the relationship of parent-related stress to estimates of expressive and receptive language skills of children referred to a communicative disorders clinic, Chafee et al. (1991) cited child behavioral difficulties, child psychosocial distress including attention deficit disorder, mother and/or child depression, and marital discord and sources of parental stress. Using the Parenting Stress Index (Abidin, 1990) their study supported the view that personal stressors affect parental perceptions of child behavioral difficulties.

Abidin and Wilfong (1989) examined the perception that highly stressed mothers make more frequent and more inappropriate use of medical services, exposing the children to frequent and unnecessary examinations. The study involved a sample drawn from a private pediatric group practice that was predominantly White (98%), largely middle class, and highly educated (86% had at least some college). The authors found the perception to be an invalid one for the sample of mothers of young children.

Parenting Stress and Maternal Addiction

It is suggested here that the daily demands of addiction on polydrug-addicted mothers would increase the levels of stress experienced and subsequently compromise

the quality of mother-child interaction. The daily demands of her addiction include the work involved in procuring regular doses of her drug(s) of choice, the money and or bartering of her belongings or body necessary to obtain the drugs, and the worry connected with what she will have to do the next time she needs more drugs. Several authors have stated that drug-dependent women are concerned about the health and happiness of their children and suggest that this worry may cause these mothers some degrees of stress in their interaction with their children (Gomberg, 1974; Lief, 1981; Reed et al., 1982). Reed et al. (1982) specifically suggested that drug-addicted mothers "often worry about their adequacy as parents and the effects of their drug use on their children" (p. 499). The research of Reed et al. suggests a relationship between the beliefs drug-addicted mothers hold and their sense of adequacy as parents; evidence of examination of the relationship between parenting beliefs and mothers' sense of adequacy was not found in this review of the literature. The possibility of this relationship leads logically to hypothesizing here a relationship between the beliefs drug-addicted mothers hold about parenting and actual parenting behaviors/parent-child interaction.

No empirical research was found that directly addressed the relationship of stressors to maternal addiction and parent-child interaction. This gap in the literature needs

to be addressed. The research presented here begins to address this need by positing that relationships between parenting stress and parenting beliefs, and parenting stress and parent-child interaction are different for polydrug-addicted mothers and non-drug-addicted mothers.

Marlatt and Gordon (1979) found support for a relationship between drinking and stress with over three-quarters of their sample reporting having taken their first drink while experiencing stress.

Parenting Stress and Familial/Social Support

Circumstances defined as "adverse" in the literature, including poverty, social isolation, lack of resources and support, have been shown to have a harmful impact on parenting and to be associated with increased parent-child interactive difficulties (Garbarino, 1976; Conger et al., 1984; Mash and Johnston, 1982, 1990).

The absence of support makes coping with life stressors tenuous at best in the life of the drug addicted-parent. In her longitudinal study of life stress with 21 female and 28 male addicts, Rhoads (1983) found use of heroin and other illegal drugs by women a means of coping with stressors in the absence of support.

Social support is frequently cited as moderating the effects of stress (Elmer, 1980; Solomon, 1986; Bettelheim, 1987). Solomon (1986), however, in his study of 327 Three-

Mile Island mother-child dyads and 134 comparisons from non-affected sites, found no evidence to support the hypothesized stress-buffering effect of social support. Solomon operationalized stress as involving parenting of young children and the environmental stressor of living at Three-Mile Island. Social support was operationalized using the Social Network Interview (Mueller et al., 1982) where subjects were asked about their primary social network, network members, duration of network relationships, and frequency of network contacts.

Parent-Child Interaction

The relationship between mother and child is generally accepted as mutually influencing, i.e., the behavior of both mother and child is influenced by the behavior of the other (Fisher and Fisher, 1986). This mutual influence occurs in the context of individual characteristics and in the larger context of their environment which similarly influences their individual and dyadic functioning. The child's health, for example, might call for specialized interaction between mother and child as in the case of the incubated premature infant (Moses and Buckner, 1985), or the drug-exposed child with an exaggerated startle reflex (Rieder, 1990).

Parent-child interaction during infancy is focused on helping the baby learn to trust via consistent and

appropriate response to the child's cues for feeding, diapering, consoling, and nurturing (Elmer, 1980). The parenting focus during toddlerhood is on increasing abilities toward self-control and independence (Elmer, 1980). Empirical efforts focus on measuring the quality and quantity of parent-child interaction and relating one or both to other aspects of parenting or child growth and development. This literature is discussed below.

Patterns of Parenting

In Webster's Ninth New Collegiate Dictionary (1991) a pattern is defined as "a reliable sample of traits, acts, tendencies, or other observable characteristics of a person, group, or institution" (p. 864). In this section a broad-brush review is presented of acts and tendencies typical of drug-addicted and non-drug-addicted mothers. It is suggested here that a combination of factors contribute to proposed differences in the parenting behaviors of drug-addicted and non-drug-addicted mothers. Included in this combination of factors are a mother's childhood experiences with her mother, the attitudes and beliefs inculcated as a result of her childhood experiences, background factors (such as culture, socioeconomic level, level of education and degree of social supports), parenting related stressors (such as a premature and/or low birthweight infant, health and/or child developmental problems), and the impact of the

drugs themselves on the mother's physiological and emotional well-being.

Non-Drug-Affected Parent-Child Interaction

Parents in the United States typically assume primary responsibility for the rearing of their children (Elmer, 1980). During infancy, parents typically are involved in relationship building and establishing mutually satisfactory, reciprocal relationships (Elmer 1980; Fisher and Fisher, 1986). During toddlerhood, parents typically are involved in setting bounds and limits on the child while permitting the child to learn and explore his or her environment on his or her own.

In her theoretical discussion of attachment issues in mother-child dyads, Davidson (1991) suggested that the parent-child relationship can be characterized by patterns of parental warmth, acceptance, availability, affection, and responsiveness to the child. She noted that not all parents demonstrate these characteristics in interaction with their children; some parents are deficient in one or more of these areas. Davidson (1991) and several other authors suggests that when parents experience depression, anxiety, stress, and other problems, they can be unresponsive or underresponsive to their children's cues and uncomfortable during parent-child interaction (Burgess and Conger, 1978; Egeland and Farber, 1984). Parents experiencing these

difficulties can also be distant, cold, insensitive and intrusive (Davidson, 1991). The quality of patterns of parent-child interaction can be further determined by characteristics of the child, the immediate and extended family, and the broader community in which they live.

In their study of mothers of hyperactive children, Mash and Johnston (1982) found mothers of hyperactive children were more directive and negative than mothers of non-hyperactive children. The degree the child displayed difficult behavior (such as complying less) was also related to problematic mother-child interaction.

Parent-Child Interaction and Maternal Addiction

Several authors have gathered parenting information from populations of poor addicted women and generated profiles of maternal addicted parenting that include descriptors such as Burns and Burns' (1988) that "mothers who give birth to infants while abusing drugs tend to be immature women who demonstrate an abnormal degree of egocentrism in the way they go about parenting" (p.159). They further suggested that drug-addicted mothers interact inconsistently with their children. Much of their inconsistency may be attributed to the phases of drug use, withdrawal, and return to drug use, and the related emotional and physiological roller-coaster these women find themselves on. The drug-addicted mother is at times strict,

blaming, punishing or ignoring her child, and at others she is lax and loving.

Davidson (1991) suggested that these can be characteristics of any mother (drug-addicted or not) in interaction with her child given individual characteristics of the mother and child and the right situation. Studies evaluating differences in patterns of interaction between drug-addicted mothers and non-drug-addicted mothers are reviewed in a later section.

Another example is found in the article by Bushong (1990) where she develops a profile of the pregnant addict. She cites the need for practitioners to be cautious of generalizations, and proceeds to characterize the pregnant addict: affected by sex role socialization, more likely to be suffering from depression, experiencing psychological problems including anxiety, phobias, schizophrenia, and personality disorders, coming from dysfunctional families of origin, having low self-esteem, and being a powerless victim of circumstances.

Other studies point out that the stereotype of the drug-addicted mother continues as the low income and/or minority woman, when we know that addiction cuts across racial and socioeconomic lines (Berger et al., 1990; Feig, 1990). Berger et al. (1990), for example, found evidence that cocaine is used across ethnic, socioeconomic, and cultural lines. Similarly, Chasnoff, Landress, and Barrett

(1990) reported comparable rates of drug and alcohol use between poor and minority women, and white and more affluent pregnant women.

The information presented thus far suggests that parenting in the context of maternal addiction is very complex, requiring consideration of many factors to characterize with some acuity. Numerous factors connected to maternal drug addiction are linked to insecure attachment and drug-affected parent-child interaction fraught with problems including maternal dysphoria, irritability, sleep problems, psychosis, depression, violent outbursts, inability to concentrate, and hallucinations, (Carr, 1975; Parker, 1979; Bauman and Dougherty, 1983; Lawton et al., 1983; Susman et al., 1985; Goodnow, 1988; Kochanska, 1990; Davidson, 1991; Thurman and Berry, 1992). Lief (1981) highlighted neonatal factors that threaten the quality of early interactions between drug-addicted mothers and their babies including irritability, hyperactivity, resistance to holding, tremors of the extremities, vomiting, diarrhea, elevated temperature, and poor sucking efficiency thus difficult feeding experiences.

In their study of communication as interaction in 39 methadone-maintained mothers of four-month-old methadone-exposed infants and 23 non-drug-addicted comparison dyads, Jeremy and Bernstein (1984) suggested that drug addiction, in and of itself, does not cause poor maternal performance

in interaction "rather, it is one among several risk factors that place limitations on a woman's resources for maternal functioning" (p. 1151). They suggested eight variables as psychological and psychosocial resources for maternal functioning, irrespective of mother's drug use status verbal-, performance-, and full-IQ scores, years of schooling, whether mother was married to, living with, and the degree of stability in her relationship with the baby's father, and severity of psychopathology. The dyads were videotaped interacting during feeding, diapering, and playing and the mothers were rated on the quality of their communication with their children. They found that the better mother's overall resources, the better maternal interaction performance. Overall resources were significantly correlated with maternal interaction performance ($r=.42$, $p < .01$).

The effects of prenatal drug exposure on the child of the addicted mother must also be included in this list of factors contributing to differences in parenting behaviors between drug-addicted and non-drug-addicted mothers. In keeping with the cognitive-behavioral theoretical underpinnings of this dissertation, the drug-addicted mother does not behave simply in response to environmental stimuli, but also in response to her child's cues and behaviors and the conscious and unconscious mental processing of these cues and behaviors (Sroufe, 1979; Schuster and Ashburn,

1980; Fisher and Fisher, 1986; Bettelheim, 1987; LeMasters and DeFrain, 1989). In other words, drug use may affect mother's ability to respond to her child, but it also affects the way her child responds to her. Prenatal exposure may affect an infant's or child's ability to send clear cues or the response tendencies of the child may be affected (Rieder, 1990). Rieder (1990), in her investigation of the interactive system between drug-addicted mother and her drug-exposed infant, found that the drug exposure of both mother and child creates an environment that stifles the potential of the mother to effectively support, nurture and stimulate the infant. The use of drugs impedes the mother's ability to respond appropriately when the child sends cues about hunger, discomfort and sleepiness. Similarly, drug exposure impedes the infant's ability to send clear cues to his or her mother.

Although symptoms vary among drug-exposed children based on the amount of drug used, the intensity or frequency of use, point during pregnancy when exposed, or the type of drug used by mother, findings show that prenatally drug-exposed infants and children frequently demonstrate hyperirritability, hyperexcitability, hypertonicity, high-pitched crying, resistance to holding, tremors of the extremities, vomiting, diarrhea, poor sucking efficiency leading to feeding problems, central nervous system effects

including neurobehavioral deficiencies, and developmental delays in language, adaptive behavior, fine motor and cognitive skills (Bauman, 1980; Lief, 1981; Dixon, 1989; Chasnoff, 1990; Rieder, 1990; Shikles, 1990; Williams, 1990). In sum, these infants and children are frequently difficult to parent, are high risk for failure to thrive, irritable, or unresponsive and they fail to elicit satisfactory patterns of interaction with their drug-addicted mothers (Davidson, 1991).

In their study of prenatally cocaine-exposed newborns at 36 hospitals in the U.S., Schneider et al., (1989) found four behavioral patterns common to these newborns that made them initially incapable of appropriately responding to their caregivers: a deep sleep response to any sort of stimulation, an agitated sleep state, vacillation between extremes of sleeping or crying during handling, and a stressed and panicked awake state.

A combination of drug-exposed neonatal and drug-addicted maternal factors can seriously threaten the quality of interaction between mother and child. Suggesting that cocaine-exposed mother-child dyads are at high risk for insecure attachment, Davidson (1991) suggested that parent-child interactions characterized by patterns of "emotional unavailability, distance, coldness, unresponsiveness, insensitivity, and intrusiveness or brutality were likely to be insecure" (p. 271-272).

Lief (1981) stated that:

"the parenting relationship is hampered by the addicted mother's inability to respond with sensitivity to the infant as well as by the infant's early unresponsiveness to the mother. Establishment of a successful interactive relationship may be further threatened by the physical state of the newborn. Babies born to addicted women show a high incidence of prematurity and low birth weight" (p. 456).

Learned Patterns of Parenting Behavior

The effects of problems with their own families of origin have been discussed as possibly contributing to differences in the way drug-addicted mothers parent in comparison to non-drug-addicted mothers (Gerber, 1973; Cersonsky, 1975, 1988; Chasnoff, 1990; Mash and Johnston, 1990; Woodhouse, 1990; Davidson, 1991). Family of origin considerations in this context are congruent with cognitive-behavioral, social-learning model approaches of modeling, learned behavior, and internalization of symbols and beliefs as discussed in Chapter II. Following the cognitive behavioral line of thought, the style in which a woman was parented would have a direct effect on the way she parents. The reason this would happen involves children learning from their parents expressed beliefs and behaviors and how parenting is done. They in turn have the same or similar cognitions and behaviors that their parents/caretakers had and engage in them with their children.

It is posited here that the use of drugs alters

parenting behavior. It is further posited that addictive involvement with drugs should not be considered alone when examining parental functioning in general and parenting beliefs, parenting stress, and parent-child interaction. The speculations here and in the literature that differences in maternal parenting behaviors are related to parenting issues in the mother's family of origin are included within the scope of this dissertation under discussions of maternal beliefs about parenting. The role of various other dimensions of maternal family of origin issues as they are related to current patterns of parenting require much more empirical investigation and support.

Escamilla-Mondanaro (1977) suggested that information on how the drug-addicted woman was parented provides insights into how she parents her own child. She found heroin-addicted women ($N=60$) in a pregnant addicts' program to be products of battering, with histories of being emotionally neglected by their parents. Drug related difficulties experienced by their children are consciously and unconsciously interpreted by the addicted mother as purposeful rejection, that the child is unmanageable, or that she is doing a poor job of mothering. The maternal response is typically withdrawal from the child, isolation for fear of being discovered as an inadequate parent, or denial of drug related problems in the child. This results in greater degrees of problems in interaction as the child

picks up on mother's discomfort and distance and responds in kind, as the problems in parent-child interaction escalate.

The family history of the addicted woman is usually described as having high levels of instability and lacking nurturance and warm loving care (Escamilla-Mondanaro, 1977; Sowder and Burt, 1980; Sutker, 1981; Woodhouse, 1990). Lief (1985) found that drug-addicted women in her hospital-based parenting program learned and internalized harsh and ineffective discipline techniques from their parental models. The women in the program found it difficult to grasp the relationship between their drug taking and their own childhood experiences. Lief found that drug-addicted mothers who had difficulty conceptualizing and understanding the connection between their drug taking and their own childhood experiences had more difficulty changing their patterns of harsh, punitive responses toward children.

Several authors have reported that female-addicts recreate their family of origin when they marry (Sowder and Burt, 1980; Goetting, 1986). The family of origin and these recreated families are characterized by high levels of conflict, deviance, broken homes, and drug use (Densen-Gerber, 1973; Carr, 1975; Sowder and Burt, 1980). Parenting by mothers reared in these environments, then, is undertaken without healthy role models. Many of these women learned parenting skills from one or more addicted parent. Merrick's (1985) findings were consistent with this

characterization. In a longitudinal study involving 235 drug-addicted women and their 269 children, he found a high occurrence of unstable home environments, neglect, and abuse as typical of the family.

Using ethnographic techniques to review the life histories of 25 drug-addicted women in a treatment program, Woodhouse (1990) found that most of the women were similar in their experiences of neglect. More than half of her subjects had been raped or were victims of incest, child abuse, or domestic violence prior to and during their addiction. Other themes from the life histories included male dominance, depression, guilt, concern about how the drug use affected their children, neglect of their children, and fear of losing their children. In sum, the life history approach was useful in gathering information about the drug-addicted woman's life that could be related to how she was functioning in her current life. Woodside did not focus on the connection of historical experiences and parental functioning; however, the connection was implied in her discussion.

Drug Procurement and Use and their Effects on Parenting

A disproportionate number of drug-addicted mothers parent in the context of socioeconomic poverty, single parenthood, and limited resources (Escamilla-Mondanaro, 1977; Feig, 1990, 1991; Shikles, 1990; Sokal-Gutierrez et

al., 1993). The dual focus in the lives of these mothers is on day-to-day survival of the family and day-to-day maintenance of her addiction needs; the latter focus frequently takes precedent over the former. Feig (1990) suggested, for example, that drug-addicted mothers lack concentration and eventually become so "intent on acquiring their next fix that they may ignore their children" (p. 4-5). Bushong (1990) emphasized that "drug-seeking behavior demands much of the physical and emotional energy that is needed for parenting. Due to drug-related illnesses, binges, or incarceration, the drug-addicted mother may be separated from her child(ren) quite often" (p. 133).

The drug-addicted mother in this context is expected to appropriately parent her children with this dual-life focus. There is typically a lack of food, finances, health care, housing and social support (Davidson, 1991; Lieberman, 1991). She is herself often undernourished, a victim of violence and neglect. Her prenatally drug-exposed child is at risk for these very same problems. Segal (1991) suggested that this combination of risk factors makes it difficult to separate the environmental stresses from the personal stresses that the drug-addicted mother experiences. It is similarly difficult to separate the effects of one drug from another, or the effects of drugs from the effects of environmental and personal stressors.

Several authors have related particular behaviors with

particular drugs (Berger et al., 1990; NIDA, 1991). For example, Blume (1985) suggested that female alcoholics have a higher history of suicide attempts and depression than males, and are likely to have a "history of using and abusing non-narcotic drugs along with alcohol" (p. 631) including minor tranquilizers, sedatives, and amphetamines. She further reported that there is evidence of impaired perceptual and cognitive functioning in female alcoholics. The issue of cognitive impairments was not explored in depth by Blume. It could logically be extrapolated that the cognitive filtering and perceptual system of the alcohol and drug-addicted woman was impaired by continued use of drugs. This means that everyday stimuli from her child and/or her environment might be consciously and unconsciously interpreted in a different manner when under the influence of alcohol or other drugs than when not under such influences.

Berger et al. (1990) described cocaine use as "associated with violent, erratic, and paranoid behavior" (p. 312). Regular use of cocaine was suggested to result in a more extreme form of behavior--"cocaine psychosis, that could include hallucinations, paranoid thoughts, bizarre and violent behavior, and delusions of possessing superhuman powers" (Berger et al., 1990, p. 312). They also found that addicted mothers frequently used alcohol to alleviate the symptoms of cocaine withdrawal.

Each drug in and of itself has specific related behavioral effects. Often ignored is the synergistic effect of polydrug use and the subsequent difficulty teasing out the effects of individual drugs on the mother and on parent-child interaction. Cocaine is a stimulant and withdrawal following ingestion frequently involves an affective "spiraling down" from the "high" that has depressive characteristics (Bresnahan et al., 1991). Alcohol is a depressant. The synergistic effect of the two (or more) drugs on maternal behavior is not delineated in the literature. Implications are, however, that during cocaine withdrawal and coinciding alcohol use the mother's demeanor may become depressed. She may experience intense feelings of guilt and self-hatred brought on by the inability to stop using the drug and realization of the impact of her addiction on her relationship with her child(ren) (Bresnahan et al., 1991). Her threshold for dealing with the demands of parenting during this time may be limited to symptoms including sadness, inactivity, difficulty thinking and concentrating, decrease in appetite, lack of sleep, feelings of hopelessness, or even suicidal tendencies.

As another example, the National Institute on Drug Abuse (NIDA, 1991), reported a strong association of sedative use with high rates of emergency room visits. Two issues are related to this behavioral manifestation of maternal addiction. First is the issue of a possible

confounding of socioeconomic status with addictive behavior. It has been found that in general poor women use emergency rooms, public health departments, and community health centers as the primary means of medical care for themselves and their children (Feig, 1990, 1991; Shikles, 1990; Ewing and Foran, 1993). Evidence of a socioeconomic factor involved in emergency room use should lead to questions about delimiting the characterization of drug-addicted women/mothers. What about the subgroup of drug-addicted mothers who have the means to have their sedative and other drug use emergencies addressed in private hospitals and private physician offices? Feig (1990, 1991) suggests that these hidden addicts are not included in current estimations of the severity of the maternal drug addiction and characterizations of these mothers as parents. Second, these mothers frequently have limited childcare resources, so children are left with immediate or extended family members, with drug-using friends, or alone as their mother procures and then uses the drug, and/or is hospitalized due to the effects of drug use (such as drug overdose) (Feig, 1990, 1991).

These and other behavioral manifestations of addiction have a dramatic impact on mother-infant bonding and interaction. These and other behavioral manifestations of addiction cause the drug-addicted mother difficulty in "mobilizing resources essential to survival including:

food, housing, consistent income, medical insurance, and medical care" (Berger et al., 1990, p. 314).

Hinds (1990) reported crack to be a drug that impaired functioning including decision making. Crack addicts "can't take responsibility for paying the rent or seeing that there's food on the table for their children" (Hinds, 1990, p. 81). As a powerful stimulant, crack creates high volatility, makes the addicted mother lose control, and causes her to be very tense and jumpy. She is highly susceptible to environmental stressors and in combination with her crack-exposed child, presents a situation that is explosive and dangerous (Hinds, 1990). Decisions to leave the child in the care of others, decisions about housing, clothing, medical care, how to feed, when to feed, and what to feed her child may be difficult at best, or ignored. With crack use a mother's ability to read and discern and respond to cues from her child are greatly impaired placing the child at risk of hunger and hygiene-related health problems.

Madden et al. (1986) described adult cocaine abusers as craving the drug, involved in prolonged sleep, fatigued, experiencing lassitude, hyperphagia, and depression following abrupt cessation of chronic administration of the drug. These behaviors have a detrimental effect on mother-child interaction. Severity of withdrawal is another issue that affects the way the addicted mother parents her child.

While she is craving the drug and is fatigued she has very little tolerance her drug-exposed infant's withdrawal symptoms. She may be sleeping for lengthy periods of time during which the infant is not supervised nor are the infant's needs being met. The constant agitation, shrill cry, and constant medical needs of many drug-exposed infants can push the addicted mother, who is often experiencing the same withdrawal symptoms, to child neglect, abuse, or abandonment. Under these circumstances she cannot deal patiently and empathically with her infant.

In a sample of heroine and methadone-maintained addicted mothers, Mondanaro (1977) found that during the times the drug-addicted mother is available to her child she typically has "diminished capacity to experience non-pharmacological joy and playfulness...with marked deleterious effect on the [relationships in] these women's lives" (p. 60). Playing and spontaneous interaction with her child may be limited, suggesting that the drug-addicted mother may have difficulty enjoying her child as a growing and developing person. This suggests another aspect of drug-affected parenting that has not been found in the literature: how much drug-addicted mothers enjoy their children compared to other group of mothers.

Patterns of Drug-Affected Parenting and the Occurrence of Child Abuse

The consequences of maternal drug addiction in parent-child interaction are rarely as clearly delineated in the literature as when in association with child abuse and neglect (Bavolek and Henderson, 1989; Kelley et al., 1991; Marcenko et al. 1993; Zuckerman, 1993). The same holds true in regards to parenting beliefs (discussed earlier) as one area that has been reported frequently in the child abuse and neglect literature. Consequently, the child abuse literature is reviewed in this discussion of patterns of maternal behavior and later in the discussion of parenting beliefs as this literature provides some illumination of the variables of interest to this dissertation.

Maternal drug addiction and its relationship to child abuse and/or neglect remains an area of controversy in the literature. Several authors have suggested that the two are not necessarily inextricably intertwined (Lief, 1981; Reed et al., 1982; Ahart et al., 1991; NAPCWA, 1991). They report, however, an increased risk of child abuse in parent-child dyads where drug addiction is a factor (Egeland et al., 1980; Reed et al., 1982; NAPCWA, 1991; Famularo et al, 1992). Several authors have suggested that whenever there are situations involving maternal addiction child abuse and/or neglect directly follows (Bavolek and Henderson, 1989; Gustavsson, 1990).

Ahart et al. (1991) in their study of programs serving drug-exposed children in St. Petersburg, Florida, Portland, Oregon, Los Angeles, California, and Chicago, Illinois, suggested that "the majority of drug-exposed infants are released from the hospital into the care of their biological mothers" (p. 3). There was a disproportionately high risk for child abuse, but not all of the mothers were assessed to be abusive or neglectful. Besharov (1990) suggested that "some drug-using parents are able to care for their children, at least with social service support. But most of their children remain at great risk while they stay at home" (p.23-24).

Lief (1979) found that drug-addicted mothers (n=8) in a hospital-based parent-training program demonstrated similar levels of parenting skills and abilities as their non-drug-addicted comparisons (n=10). She further found that initial differences between the two groups on measures of parental functioning disappeared after program involvement. The findings in both of these studies suggest that the possibility of child abuse in situations involving drug-addicted mothers is of greatest concern when there is a lack of parenting training and social supports.

Child abuse and maternal drug addiction are frequently viewed synonymously and are typically convoluted (Bavolek and Henderson, 1989). For example, there have been recent court rulings such as Baby X (1990), that have considered

newborns with symptoms of drug withdrawal as neglected children to be immediately removed from the custody of their parents with no further evidence of neglect necessary (Gustavsson, 1990).

In their study involving 255 women in a large urban clinic ($n=52$ self-reported substance abuse, $n=173$ denied history of substance abuse) who were identified as high-risk pregnancies, Marcenko et al. (1993) found that 62 percent of the substance-abusing women indicated having been physically or sexually abused as a child or adult. The implications of this are significant when considering that parents primarily learn how to parent from their parents and gain the foundation of their parenting belief system from their parents. The substance-abusing women were more likely to have at least one child in out-of-home placement [$\chi^2 (1, 160)=14.68, p < .001$]. Placement was indicative of problems in the parent-child relationship.

The authors acknowledged that due to the sole use of self-report to classify participants in the two groups, their methodology included a high risk for misclassification of women to the non-drug-addicted group. They did not, however, acknowledge possible confounding of child abuse with socioeconomic and race-related variables. Evidence points to extrafamilial factors as primary in child abuse including poverty (SES) and the lack of community support agencies (Egeland, 1980). The authors were studying a

predominantly African-American (94%) group of women from a large urban clinic. Four percent of the participants were Hispanic, and two percent were White.

Famularo et al. (1992) found that of 190 randomly selected juvenile court records, 67 percent of the cases involved parents who were classified as substance abusers. The results revealed an association between alcohol abuse and physical mistreatment. The symptoms of withdrawal from heavy alcohol use were cited as contributing factors to abuse. The withdrawal symptoms included "sweating, anxiety, depression, insomnia, headache, weakness, nausea or vomiting, hallucinations, illusions, and delirium" (Famularo et al., 1992, p. 477). Thirty-six of the 190 cases involved physical and sexual mistreatment of the child; 66 only involved physical mistreatment, 18 only sexual mistreatment, and 70 involved other forms of mistreatment.

Kelley, Walsh, and Thompson (1991) compared characteristics of 30 cocaine-addicted mothers with drug-exposed children to 30 non-addicted/non-exposed subjects on issues related to child mistreatment. Their sample was drawn from a pediatric well-child clinic in a large, urban teaching hospital in the Northeastern United States. Subjects were assigned to the drug-addicted group if there was a positive urine screen of mother or newborn for cocaine metabolites, or if the mother reported prenatal cocaine use. In the drug-addicted group, 80 percent of the subjects were

Black, 13.3 percent were Hispanic, and 6.7 percent were White. Ninety-six percent of their subjects received Medicaid. The non-drug-addicted mothers were matched with the drug-addicted group on race, gender of child, and socioeconomic status operationalized using mothers' type of medical insurance.

Data were collected through a retrospective chart review. Twenty percent of the cocaine-exposed infants were not identified at birth and 10 percent were never reported suggesting that subjects in the non-drug-addicted group could have been placed in the wrong group due to missing information. Twenty-three percent of the cocaine-addicted group had subsequent reports of suspected child abuse or neglect after discharge from the hospital, while three percent of the non-drug-addicted group had similar reports. Twenty-three percent of the children in the cocaine-exposed group were placed into foster care due to neglect and abuse, while none of the children in the comparison group was placed. The authors suggest that placement may have been related to other psychosocial problems in the drug-addicted mothers' lives including a high rate of homelessness (21 percent).

Background Factors

Many addiction studies do not clearly delineate the effects of background variables from the effects of drug addiction. The worst-case scenario that could result from this lack of delineation is the characterization of drug-addicted women/mothers based on the findings related to one or another subgroup of addicted women. Evidence of the need to address these issues in addiction research is presented below.

In the Non-Addiction Literature

It is generally accepted that parents from different cultural backgrounds, social classes, and with differing levels of support, may react to their children in different ways due to differences in life conditions which may result in their having different attitudes, beliefs, and values (Sears and Maccoby, 1957; Laosa, 1981; Fu et al., 1984; Mash and Johnston, 1990).

Numerous authors in the addiction and the non-addiction literature have found that parenting behaviors often covary with a number of demographic variables including race, poverty, level of education, and limited resources (Zussman, 1980; Laosa, 1981; Conger et al., 1984; Zetterstrom, 1986; Kemp et al., 1990; Kelley et al., 1991). Sears and Maccoby (1957) found that "differences in religion, ethnic origin, socioeconomic status, and family size all contribute to a

variety of [parenting] values and practices" (p. 10). Zunich (1961), in a study of relationships between childrearing attitudes and maternal behavior discussed earlier in this chapter, found middle-class mothers interacted more with their children using directive, helping, structuring, attentive, and interactive play techniques than did lower-class mothers. Lower-class mothers were observed to remained out of contact more with their children than middle-class mothers. Zunich's explanation of the fact that lower class mothers fell on dimensions with negative connotations while middle class mothers fell on dimensions with more positive connotations was that "the lower-class mothers may have exhibited shyness or reticence in a totally unfamiliar situation" (p. 236). Given the time frame of the study (1961) it is suggested that consideration be given to bias in the instrument used as well as in the presentation of results.

In her examination of attachment issues and the cocaine exposed mother-child dyad, Davidson (1991) suggested that researchers and practitioners working with drug-addicted women and their children must consider the heightened levels of stress poor families in general cope with when assessing stress and drug-affected dyadic functioning. In samples including poor drug-addicted mothers in comparison to poor, middle-class and upper-class mothers, for example, caution must be taken not to permit income to confound research

results. Davidson's concern is addressed in the methodology used in this dissertation.

Bakeman and Brown (1980) in their study of early mother-child interaction in a sample of 43 hospitalized mother-child dyads, asked "whether relatively healthy preterm infants would have different kinds of interactions with their mothers compared to full-term infants. And indeed, the two groups exhibited quite different interaction styles" (p. 438). Preterm and fullterm dyads were distinguished on measures of early interactive style in a multivariate analysis of variance [$F(6,34) = 6.1, p < .001$]. Interaction between mothers and preterm infants was typified by difficulty with eye contact and difficulty establishing a rhythm of interaction that was satisfactory to both mother and child.

In his study of childrearing attitudes, family size, and the value of children, Mohan (1981) found that the number of children, age of mother, and educational level of mother were associated with the value placed upon the children and the care provided. Of the 618 survey (name of instrument not provided) respondents (360 women and 258 men), Mohan found that attitudes indicative of rejection of children decreased as the respondents' educational level increased, [$F(2, 600) = 13.90, p < .001$] He suggested that the exposure to child development and parenting courses and materials for mothers with more education were reason for

this finding. Mohan also found value of children scores were positively related to the number of children in the family [$F(2, 600) = 19.14, p < .001$]. Younger mothers who had three or more children in a relatively short time had higher negative attitude towards children's scores than the other research participants.

Mash and Johnston (1990), found evidence that the number of children in the family influenced parent behaviors. In other words, experience as a parent, moderated parenting behavior. The more children, the less time parents had to spend with each child. Fu et al. (1984), using the Parent Attitude Research Instrument (PARI) by Schaefer and Bell (1958) in a study of maternal dependency and childrearing attitudes in 964 black and white mothers of adolescent females, found that race, income, and mother's marital status influenced attitudes on all four measures: Fostering Dependency [$F(1,903)=11.62, p=.0007$], Excluding Outside Influences [$F(1,903)=7.62, p=.0059$], Loyalty to Parents [$F(1,903)=6.32, p=.1021$], and Encouraging Independence [$F(1,903)=12.57, p=.0004$]. Fu et al. reported that black mothers were more dependent and promoted more dependent relationships with their children while the white mothers were less dependent and promoted a greater degree of independence. They found a significant interaction between race and income on fostering dependency and excluding outside influences. They also found a significant

interaction between income and family type (e.g. married, single, other) and mothers of single-parent families consistently scored lower than other mothers on the loyalty to parents dimension.

These findings deserve specific consideration in light of this dissertation and future research on drug-addicted and non-drug-addicted mothers. These authors found "black mothers and mothers from rural areas tended to be personally more dependent" (p. 803), and suggested in their conclusion that this "dependency could be a result of their respective sociocultural environments" (p. 803). They further suggested that for black mothers "this could be a positive means of maintaining cultural identity and kinship ties while being self-reliant in their interaction with the mainstream culture" (p. 803). In their 1984 study, Fu et al. presumed to comment on "dependency" in black mothers based on the results from an instrument developed in 1958. From all indications this instrument had never been revised. Current understanding of questionnaire design suggests the strong possibility of bias. They discussed "Dependency" throughout their presentation as having negative connotations and attempt no examination of the effects of living in a racially and socioeconomically oppressive society.

The ramifications of this type of study are serious to future characterizations of minority and poor mothers.

First, instrument development, validity and reliability must be considered before, during and after drawing conclusions. Several studies cited here that focused on parenting attitudes and beliefs used the PARI (Schaefer and Bell, 1958) from Zunich's study in 1961 to Fu et al.'s study in 1984. As early as 1965, Becker and Krug suggested that the PARI had problems related to an acquiescence-response set. The instrument also showed biased according to the educational level of respondents. These findings suggested that bias contributed, in part, to the results found.

Secondly, the authors do not challenge the operationalization of categories of beliefs developed by Schaefer and Bell (1958). Fu et al, for example, acknowledged that the attitudes expressed by black and rural mothers may have been related to the survival tools needed to negotiate their environment. Another challenge to the results of Fu et al. is consideration of the historical importance of connectedness with immediate and extended family in the Black community. It is suggested that the behaviors that are negatively defined when comparing Black, or rural, or poor families with other families would have different connotation when defined in their proper context.

In the Addiction Literature

Today we know that drug use, abuse and addiction cuts across race, income, age, and gender differences (Carr, 1975; Farran, 1980; Beschner and Thompson, 1981; Bauman and Dougherty, 1983; Reed, 1985; Dye, 1989; Feig, 1990). The results of several studies have shown that drug-addicted women share several characteristics, regardless of race, socioeconomic status, or age including low self-esteem, feelings of alienation, social isolation, anxiety, and depression (Beckman, 1984; Reed, 1985; Bushong 1990). Feig also pointed out that addicted mothers typically lack an interpersonal support system that might help them in their parenting responsibilities.

Inadequacies in the addiction literature are frequently related to failure to consider the confounding of socioeconomic status with addiction status and the confounding of socioeconomic status with racial-ethnic-group membership. In other words, most studies do not clearly delineate the effects of poverty and oppression from the effects of drug addiction.

A lack of care in addressing confounding variables could result in the characterization of drug-addicted women based on characteristics frequently found in a subgroup of drug-addicted women. For example, poor and minority women are frequently those who end up in public health centers and treatment situations where research data are collected.

Subsequently, researchers have taken their results and developed characterizations of drug-addicted women often generalizing to the broader population of drug-addicted women/mothers (Feig, 1990). Characterizations based on these generalizations, minus consideration of background variables, frequently occur in descriptions of these women/mothers.

Numerous studies deal with maternal drug addiction in the context of poverty and oppression, overlooking the impact of socioeconomic context on their characterizations of addicted mothers. In other words, the addiction status and/or the race of mothers in many studies is permitted to wash out the importance of other demographic characteristics. This finding raises concern regarding the tendency to characterize addicted mothers as poor, self-centered, negligent and abusive mothers who are incapable of close nurturing relationships with their children, without taking into consideration the impact of poverty and classism, race and racism, and oppression on parental functioning.

There are, however, studies that have taken background variables into consideration. Lief et al. (1991), for example, in their analysis of the association of parent-child interaction and children's well-being over time, found that "economic hardship was associated with lower sense of well-being as reported by the children and decreased school

and emotional adjustment as reported by the mothers" (p. 16). It could be extrapolated that the stress related to economic hardship was transmitted from the mothers to their children who in turn evidence their experience of the stress in their lower sense of well-being and decreased school and emotional adjustment.

In characterizations of addicted women and/or mothers the subgroup frequently omitted for consideration is the addicted mothers who are the daughters and wives of affluence, or affluent themselves, who, by virtue of their resources and related abilities to cover up their addiction, are not included in many of these studies. These drug-addicted mothers would not be clients, for example, in the treatment centers from which data on methadone-maintained mothers (Bauman, 1980) were collected. It is important, then, to consider that drug addiction and socioeconomic factors such as resources that may be confounded when analyzed together to assess drug affected parent-child interaction (Jeremy and Bernstein, 1984). Egeland and Sroufe (1981), Greenspan (1982), and Jeremy and Bernstein (1984) also found limitations in psychosocial resources correlated with poorer parent-child interaction.

Jeremy and Bernstein (1984) suggested that drug addiction, in and of itself, does not cause poor maternal performance in interaction "rather, it is one among several risk factors that place limitations on a woman's resources

for maternal functioning" (p. 1151).

Methodological Issues in the Literature

The task of identifying relationships between parenting beliefs and parenting behaviors, parenting beliefs and parenting stress, and parenting stress and parenting behaviors is fraught with difficulties. The difficulties include the use of a limited number of observations and attempts to relate them to global attitudes and belief structures (Holden and Edwards, 1989), small sample sizes, problems discriminating between different parent groups, and problems with validity in instruments used to measure beliefs including responses sets (e.g. acquiescence set, opposition set, extreme set, and social desirability set) (Gordon, 1957; Holden and Edwards, 1989).

One of the most frequent problems encountered in this review of the literature was using sample sizes too small to detect significant or clinically interesting effects. Bauman (1980), for example, in her study of differences in parenting attitudes and parenting behavior between 15 drug-addicted and 15 non-drug-addicted mothers suggested that a limitation to finding significant statistical results was sample size. She alluded to the increased risk of Type I Error and the need for a larger sample size to decrease Type II Error. She also used self-report of prenatal history and

suggested concerns regarding the validity of self-report under circumstance of prenatal drug exposure. There were concerns that the drug-addicted mothers may provide answers to make them look better than was actually the case. Bauman also suggested that her use of video taped play sessions to assess mother-child interaction was "artificial" and limiting, possibly resulting in a distortion of the results on the behavioral measure.

Because of the small sample sizes many of the studies were viewed as descriptive studies to be replicated or followed by studies on larger samples. There was no evidence of power analysis in any of the studies reviewed. This is a limitation in the literature because the researcher who may be interested in replicating particular studies, has no guidance or estimate of the number of subjects needed to detect significance before beginning.

Kelley et al., 1991 used a retrospective case record review to gather data for their study of child abuse occurrence in a group of cocaine-addicted mothers, their drug-exposed infants, and a group of non-addicted/non-exposed matched comparisons. Using this approach they were able to match comparisons with the research group on age, race, gender of child, and socioeconomic status. They were also able to use a more sophisticated method of assigning mothers to the drug-addicted group, i.e., occurrence of positive drug urine screens of mother or newborn child, as

well as self-report. They discovered discrepancies in this system of recording and reporting evidence of prenatal exposure of children to cocaine, however, as 20 percent of the infants were not identified at birth. Thus, the possibility of misassignment to groups remained a problem in their studies and similar caserecord-based studies (Famularo et al., 1992).

By matching the groups on key demographic variables, Kelley et al., gained some control over the confounding effects of those variables with drug use. The authors did not speculate on the fact that their sample was predominantly Black (80 percent in both groups), or predominantly Medicaid recipients (96 percent in both groups), nor did they comment on the impact of these variables on their findings.

A methodological approach frequently encountered in this review was the use of controls or comparisons. Several authors were able to use drug-addicted comparisons who differed in parenting status. The predominant comparison group used, however, was composed of non-drug-addicted or non-clinical women/mothers. Although comparison subjects need not be exactly matched to be useful, it is clear that attempts are made by researchers to match or compare groups on demographic factors of race, age, income/socioeconomic level, and level of education.

Variability in the rating of observers was frequently

presented as a methodological concern with most researchers reporting an interrater reliability coefficient or the percentage of exact agreement (Mannino et al., 1968; Bakeman and Brown, 1980; Zussman, 1980; Easterbrooks and Goldberg, 1981; Jeremy et al., 1984; Rickard et al., 1984; McGillicuddy-DeLisi, 1985; Barden et al., 1989; Kochanska et al., 1989; Kochanska, 1990). Martin (1986) suggested that "blinding the observers regarding source of the subject (control vs. experimental) guards against weighing results according to the observer's biases. This can particularly affect classification of 'doubtful' or 'borderline' outcomes" (p. 126). Evidence of using blind rating techniques to address the effects of variability of ratings was available in three studies. Blind rating was used in Brody's (1965) study of the relationship between maternal attitudes and behavior "the relationship between the attitude scales and the observations were not explained...code numbers were used on the attitude scoring sheets, so that no knowledge of the mothers' attitude scores was available to the observer in the interaction" (p. 318). Rickard et al. (1984) used blind rating with their use of observers who were naive to the purpose of the study. In a nonobservational study, Mills and Rubin (1990) had parents' responses to vignettes coded by coders unfamiliar with the hypotheses being tested. To address concerns about variability Mills and Rubin stated that "coders were trained

in the use of the coding systems until the level of agreement between each of them reached 80% for a small subset of transcripts" (p. 142).

Summary

In this chapter numerous aspects of parenting were described, from the parenting beliefs, parenting stress, and parent-child interaction characteristic of non-drug-addicted mothers to the impact of background variables on mother-child interaction. A historical lack of attention in the literature to key demographic differences among drug-addicted women is changing to recognition of the effects of race, age, social class, support system, and number of children on our characterizations of drug-addicted women and on our research results. Along the same lines, it is becoming clear that in acknowledging differences among drug-addicted mothers we may understand the characteristics that they share with other mothers (Reed, 1985).

Data collection techniques clearly have an impact on the amount of confidence researchers have in their results. Kelley et al. (1991) and Famularo et al. (1992) used case record reviews. Kelley et al. suggested that using chart information to place subjects into drug-addicted/drug-exposed and non-drug-addicted/non-drug-exposed groups was not reliable. This method of data collection is prone to

human error in the form of misinformation and/or incomplete information (Babbie, 1992). Famularo et al. suggested that the questions the researcher wants answered may not be asked in the record information as the information was not important to the purpose of the initial data collection. After reviewing the results of their data, Famularo et al. realized that knowledge of the state of the perpetrator of the abuse during the time of deviant behavior may be helpful in future formulations of when children are least at risk. Information to answer this question was not available in the records.

It is clear that there is contradictory evidence regarding relationships between parenting beliefs and parent-child interaction, between parenting stress and parent-child interaction, and between parenting beliefs and parenting stress. Even using the same instrument, the PARI by Schaefer and Bell (1958), Zunic (1961) and Fu (1984) reached different conclusions regarding parenting attitudes. It is suggested by the author of this dissertation that conceptual and methodological differences are the reason for differences in finds across studies of the same or similar variables.

There is a range of consistency (or inconsistency) in operationalization of parenting beliefs, parenting stress, and parent-child interaction, from no similarity in operationalization to some similarity indicative of a lack

of integration of ideas in this area of the literature. Even in the midst of inconsistencies and differences, there are a few areas on which the majority of authors agree. First most authors in the area of parent-child interaction agree that the role of the parent is to develop mutually satisfying interaction (Elmer, 1980; Fisher and Fisher, 1986). Second, most authors in this area also agree that the purpose of parenting is to help the child reach optimal growth and development potential (Elmer, 1980; Fisher and Fisher, 1986).

The cognitive-behavioral model and empirical literatures support the positing of interrelationships among parenting beliefs, parenting stress, and parent-child interaction. Though the findings of relationships among these variables in a number of studies have been modest, the indication is for further examination and increasing levels of sophistication in arriving at results. Sample sizes were typically small in the studies where mothers' addiction status was under consideration. Articles reviewed that included mother's addiction status used sample sizes ranging from $N=18$ ($n=8$ addicted mothers and $n=10$ non-addicted mothers) (Lief, 1976); $N=30$ ($n=15$ drug-addicted mothers and $n=15$ non-drug-addicted comparison mothers) (Bauman, 1980); to $N=60$ ($n=30$ drug-addicted mothers and $n=30$ non-drug-addicted comparison mothers) (Kelley et al., 1991). Other sample sizes ranged from $N=62$ ($n=39$ drug-addicted mothers

and $n=23$ non-drug-addicted comparison mothers) (Jeremy and Bernstein, 1984); $N=255$ ($n=52$ substance abusing pregnant women and $n=173$ non-substance abusing pregnant women) (Marcenko et al. (1993); and $N=235$ drug-addicted women and their 269 children (Merick (1985). The sample size used in this dissertation is comparable to and in numerous cases larger than those found in the addiction literature.

With few exceptions, the number of drug addicted mothers in studies reviewed point to the historical difficulty of accessing this population for treatment as well as for research. As mentioned earlier, drug-addicted women, mothers particularly, often become inhabitants on the fringes our society. The stigma attached to this problem is also, in all probability, carried by the drug-addicted mother herself forcing her further away from criticizing and condemning people.

The sample size in this dissertation is comparable to sample sizes in many of the studies on women and addiction found in the literature today. More specifically, this sample size is comparable to and seems to exceed many of the studies found that have pregnant and or parenting drug-addicted women as a focus. This comparability in sample size is, however, accompanied by the problem of limited power to detect effects at the specified level of alpha, given the sample size and design used.

Hypotheses

The research question is: does mother's addiction status (polydrug-addicted or non-addicted) moderate the interrelationships among parenting beliefs, parenting stress, and parent-child interaction when mothers' race, income, level of education, age, number of children, and child's prematurity status are held constant? The hypotheses subsumed within this research question are that:

1. Mothers' beliefs about parenting are related to the degree of parenting stress they are experiencing.

Parenting beliefs are delineated using the domains of beliefs mothers hold about empathy towards their child's needs, beliefs in the value of physical punishment, and beliefs regarding role reversal in the parent-child relationship. Parenting stress is delineated using the domains of mothers' perceptions of their child's behavior, the quality of mothers' relationships, the social support network available to them, and their perception of the general stresses of parenting.

2. The degree of parenting stress mothers experience is related to their behavior in interaction with their children.

Parent-child interaction is delineated using the domains of behavior via the care and experience mothers provide their child; maternal interest in their child's achievement and mastery, enjoyment of the child, and maternal self-concept; and establishment of trust, separation and individuation, and establishment of conscience.

3. Mothers' beliefs about parenting are related to their behavior in interaction with their children.

4. The partial correlations table for polydrug-addicted mothers will show interrelationships among parenting beliefs, parenting stress, and

parent-child interaction that are significantly different from the partial correlations table for non-drug-addicted mothers.

The hypothesized pattern of interrelationships among parenting beliefs, parenting stress, and parent-child interaction as moderated by maternal addiction status is shown in Figure 3:

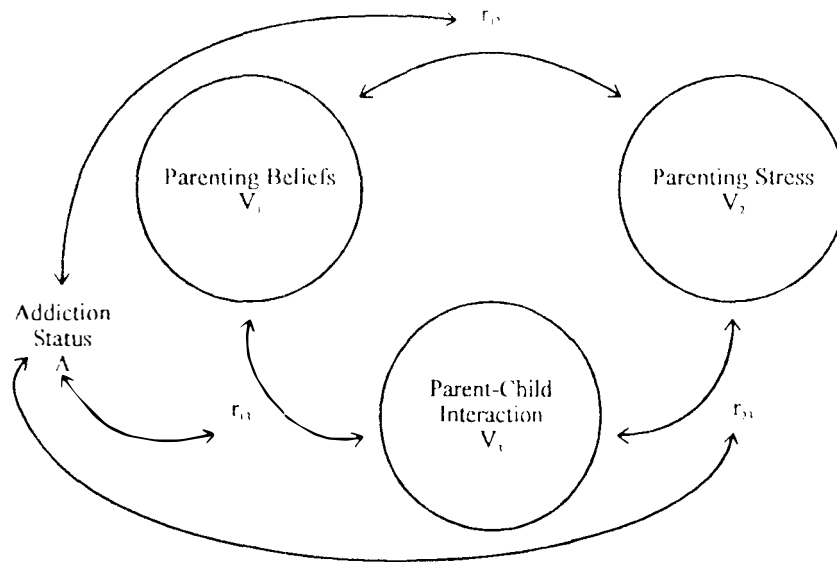


Figure 3. Pattern of Intercorrelations among Parenting Beliefs, Parenting Stress, and Parent-Child Interaction in the Context of Maternal Polydrug Addiction or Non-Drug Addiction

CHAPTER IV

METHODOLOGY

Overview

Data from a program evaluation of Great Starts were used in this study of the interrelationships among parenting beliefs, parenting stress, and parent-child interaction. Data for the polydrug-addicted mothers were collected by Great Starts program staff for the purposes of intake/admission assessment, treatment planning, and program evaluation. The Great Starts Director and the Program Evaluator consented to use of evaluation data in this dissertation research. Only data on Great Starts clients meeting specific selection criteria are analyzed in this dissertation. The Great Starts subjects involved, and the process of selecting these subjects, are described below.

Non-drug-addicted comparison data were collected by this researcher following the same data collection protocol used by Great Starts. This protocol is described below. This chapter also describes the non-drug-addicted comparison subjects, limitations inherent in the choice of comparison population, instrumentation, data collection, and other methodological procedures.

Design

Examination of mother's addiction status as a moderator of the interrelationships among parenting beliefs, parenting stress, and parent-child interaction is a fairly new and unique research consideration. The gap in our knowledge base suggests that current empirical efforts focus on exploring, describing, and observing these interrelationships to gain insight into how they are moderated by mother's addiction status. The research described here is exploratory, descriptive and observational. The exploratory, descriptive, and observational research approaches are discussed below.

This research addresses our knowing very little about the influence of addiction on the above variable relationships as an exploratory research opportunity. As exploratory research, this dissertation utilizes practice-based data that exists naturally in the Great Starts evaluation data base to verify the existence of interrelationships among parenting beliefs, parenting stress, and parent-child interaction in the sample of 70 mother-child dyads.

Descriptive research designs are frequently used when the major relevant variables have been identified and can be measured (Yegidis and Weinbach, 1991). Parenting beliefs, parenting stress, and parent-child interaction have each

been extensively examined in the child development and parenting literatures. Efforts towards the identification of patterns of relationships among these variables, however, are fraught with conflicting evidence. This situation suggests continued use of exploratory design approaches, coupled with descriptive research design components, in our efforts to understand these interrelationships and to gain more consistent evidence of their existence. The lack of randomization (mothers were not randomly assigned to the polydrug-addicted and the non-drug-addicted groups) also suggests the use of an exploratory-descriptive design (Yegidis and Weinbach, 1991).

A descriptive statistics design is used to test the research hypotheses. Descriptive research designs are not usually used to seek support for hypotheses (Yegidis and Weinbach, 1991). There are, however, some exceptions to this principle, including situations (such as the one presented in this dissertation) where relationships among variables suggest themselves in the literature. Although fraught with conflicting evidence, researchers in the child development and parenting fields continue to hypothesize and design research focused on relationships among parenting beliefs, parenting stress, and parent-child interaction. There has been little attention paid, however, to the moderating effects of addiction on these interrelationships. The fact that researchers continue to focus on this area,

and the apparent gap in the literature for consideration of mother's addiction status, provides indication of the relevance of this dissertation.

This research also utilizes an observational design component. The protocol is described in the instrumentation section of this chapter. Observation is generally considered a type of descriptive research (Yegidis and Weinbach, 1991), and is used in this research to determine two things: (1) if there is a relationship between what mothers report as their parenting beliefs and how they actually interact with their children, and (2) if there is a relationship between mothers' self-reported level of parenting stress and the quality of their interaction with their children. These questions are addressed in the results and discussion chapters.

Great Starts and comparison site day care staff used structured observation techniques to assess parent-child interaction on three broad dimensions: experiences provided by mother, attitudes, and developmental issues. These dimensions were assessed while observing mother and child in interaction in the day care: during feeding (bottle or snack time), during diaper changes and toilet training activity, and in face-to-face interaction including talking, explaining, consoling, or playing. The observer role was minimally obtrusive in that staff also engaged each subject in conversation about sleeping, feeding, bathing, and play

routines during the observation period.

The dissertation hypothesis suggested that mother's addiction status moderates the interrelationships among the key variables, when mother's income level, education, race, age, number of children, and child's prematurity status are held constant. The Adult-Adolescent Parenting Inventory (Bavolek, 1984) and the Parenting Stress Index (Abidin, 1990), both self-administered paper and pencil questionnaires, were used to measure parenting beliefs and parenting stress, respectively. The Parent-Child Interaction Form (Lief, 1985), was used by Great Starts day care staff members and staff members at the 5 comparison data day care sites to measure parenting-child interaction. Overall parenting belief, parenting stress, and parent-child interaction scores were derived and the association between the sets of parenting attributes determined using correlational analysis. Zero-order and partial correlational analyses were used to test the research hypotheses. The Pearson's r correlational statistic was used to analyze the data obtained.

Because exploratory descriptive designs are used to describe phenomena as they occur naturally, issues of accuracy of measurement and generalizability of results take on great importance (Yegidis and Weinbach, 1991). To address concern with accuracy of measurement, the data from each instrument used were analyzed using correlational item

analysis. Item-to-total-scale correlations (for each item) and Cronbach's alpha reliability coefficient were used to measure the internal consistency of each scale (Nunnally, 1967; Cohen and Cohen, 1983; SAS, 1985; Yegidis and Weinbach, 1991). According to Nunnally, coefficient alpha sets a lower limit of reliability of an instrument, based on the average correlation among the items. If a test is too short or the items have little in common, the reliability will be very low. The higher the correlation among the items, the higher the internal reliability of the instrument. According to Vogt (1993), Cronbach's Alpha "ranges from 0 when a measure is completely unreliable, to 1.0 when a measure is perfectly reliable" (p.35). See Chapter VI for a discussion of test reliability results.

Researchers often hope to be able to generalize results from their research to a larger population. The design presented here attempts to generalize logically to a larger population of all polydrug-addicted mothers with drug-exposed infants and young children, who were involved in the 32 AIA funded rehabilitation programs during this study's data collection period from August 1991 through May 1993. Logical generalization is discussed in depth in Chapter V.

Data Collection Sites

In Chapter I, history was presented about the formation of 32 U.S. Abandoned Infants Assistance (AIA) programs, established to address the needs of abandoned drug-exposed and other children and their mothers. To meet funding requirements, each of the programs included a program evaluation component. The evaluation component offered this researcher the unique opportunity to use data from one of the few residential programs in the U.S. addressing the needs of the drug affected mother-child dyad. The Great Starts program is described below, followed by a description of the Great Starts therapeutic day care center.

Great Starts

Great Starts, in Knoxville, Tennessee, is one of the four AIA programs providing residential transitional housing and services for drug-addicted women and their prenatally drug-exposed infants and children up to three years old. For a maximum of one year, polydrug-addicted mothers receive comprehensive rehabilitative services from caseworkers, nurses, a teacher-parent educator, social workers, a substance abuse counselor, day care workers, and student interns. Great Starts also offers a range of therapeutic components including pre- and postnatal support, therapeutic day care, respite services, parent education, independent

living skills training, General Education Diploma (GED) tutoring, and job readiness support. Program components also include individual and group therapy, nutritional counseling, nursing advocacy, and drug addiction and recovery support, and Transportation to (and on site) Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) meetings.

The assessment and enhancement of parenting skills are central to the provision of services in the Great Starts program. Specific program goals include the assessment of and changing of high-risk maternal attitudes and beliefs regarding parent-child relationships and high-risk child-rearing practices, to low-risk and/or no-risk attitudes, beliefs, and practices. "High risk" refers to attitudes, beliefs, and child-rearing practices that are related to abandonment, abuse and/or neglect, delayed or deterred emotional and/or physical development of children). This and other Great Starts program goals are based on an assumption that changing attitudes and beliefs about children and parenting in drug addicted women will result in healthier parent-child interaction.

The Great Starts Therapeutic Day Care is a program which focuses on the care of and the psychosocial development of the drug exposed infants and children (up to three years old) of Great Starts participants. Each of the

infants and children are initially assessed as high risk for developmental delays due to the drug exposure and the plan of intervention with these infants and children focuses on the developmental milestones that each child reaches as measured by the Early Learning Accomplishment Profile for Developmentally Young Children, Birth to 36 Months (E-Lap) (Glover et al., 1978). The day care is licensed by the Tennessee Department of Human Services (TDHS), to serve up to 14 infants (age 6 weeks to 12 months) and 14 toddlers (age 12 months to 36 months).

In terms of level of demographic diversity in this sample, the group of polydrug-addicted mothers and their drug-exposed infants and children for which data was obtained was socioeconomically homogeneous; nearly 90 percent of the mothers reported AFDC benefits as their only income. The group is made up of 39 percent Black clients and 61 percent White clients. These are just two of the demographic variables on which the polydrug-addicted and the non-drug addicted mothers are compared. The demographic characteristics of this polydrug-addicted group are described in detail in Chapter V.

For the enhancement of parent-child interaction, one of Great Starts day care staff work to bring together the newly recovering polydrug-addicted mother and her drug-exposed child in the day care setting. This goal is accomplished during scheduled parent-child interaction sessions, and

during breaks between classes and therapy sessions. The protocol used to accomplish the enhancement of mother-child interaction includes an intake assessment period (first 5 days of child's involvement in the day care) during which the child's individual developmental strengths and weaknesses are assessed, and mother-child interaction is observed and assessed for strengths and weaknesses. Areas requiring strengthening for each child and for each mother-child dyad are noted and presented to day care staff, the mother's Great Starts case manager, and other staff during weekly treatment team meetings. Once the areas of concern are noted, a treatment plan is developed and intervention is initiated accordingly.

The Child Day Care Centers

Five out of ten Knoxville, TN area day care centers contacted agreed to participate in this dissertation research as non-drug-addicted comparison data collection sites. There were five criteria used in the selection of day care centers to include in this study:

1. Recommendation for inclusion as a comparison group data collection site by the director of the Great Starts day care center, who had a history of working with several local day care directors and knowledge of these program's philosophies and approaches to child development and family issues.

2. Clients composed of mothers with infants and children up to three years old.
3. A socioeconomically, racially, and educationally diverse clientele from which mothers would be encouraged to volunteer to participate in this research.
4. A level of parent and staff involvement that would not need to be altered to incorporate the observational data collection regimen.
5. A commitment to being trained and carrying out the prescribed observational data collection regimen.

Each of the five day care centers used met these criteria. The mothers from each of these day care settings who met the non-drug addicted criteria would also meet the comparison group selection criteria for this dissertation.

There are several limitations inherent in the use of mother-child dyads from these five day care centers as non-drug addicted comparisons. The first has to do with the validity of self report of non-addiction status. The drug addiction status of Great Starts participants was verified by self-report and by one or a combination of collateral sources including obstetric personnel who documented drug exposure symptoms in the new born child, drug addiction treatment center personnel, urinalysis (drug screens), Department of Human Services Child Protection workers, or a

recorded history of drug use related medical, psychiatric, or legal difficulties.

The mothers from the five day care centers, however, were self-selected into the non-drug-addicted comparison group, with no corroborating evidence provided. In the "request for participants" letter that accompanied their questionnaire packet (See Appendix D), each prospective comparison group participant was informed that non-drug-addicted and non-drug-exposed comparison dyads were sought for this dissertation. One concern, however, is the lack of independent corroboration of non-drug-addicted status for these mothers.

An interesting finding that fits into the consideration of validity of self report is that all but one of the non-drug-addicted mothers reported that the identified target child for this study was not exposed to alcohol or drugs during the pregnancy. This finding seems inconsistent with what we do know about women, pregnancy, and drugs: (1) that non-abusive and abusive alcohol use frequently occurs in the first trimester because many women do not discover their pregnancies until after that time; and (2) that many doctors continue to tell their pregnant patients that one or two occasional drinks would not be harmful to the developing fetus. This finding is discussed in detail in Chapter V.

The fact that a significant number of mothers decided not to participate in this study suggests, however, that the

self-selection process may have addressed this issue with a resultant weeding out of mothers who had problems with drugs. It is possible that the extensive questionnaire packet may have also served to weed out mothers who were non-drug-addicted but experiencing stress in their parenting role. The limitations of this dissertation are discussed in more detail in Chapter VI.

This introduction to discussion of the five day care centers from which comparison data was collected focused on the day care selection criteria and limitations inherent in this selection process. The five comparison group data collection sites are described below.

The Children's Center of Knoxville, Inc., is a program which focuses on the individual developmental processes of each child. The center provides child care for children six weeks old to six years old. Each child is assessed upon entering the program using the Early Learning Accomplishment Profile for Developmentally Young Children, Birth to 36 Months (E-Lap) (Glover et al., 1978) and work with that child focuses on strengths and weaknesses accordingly. The center is licensed by the Tennessee Department of Human Services to serve up to 90 children.

This Center also serves a group of children defined as high risk by the Department of Human Services. Approximately 20 percent of the children served come from

family situations considered to be high risk for abandonment, neglect and/or abuse, and developmental delays. These mothers and children are referred to the day care by the Department of Human Services. These mothers and children are most like the mothers and children of Great Starts because of their high-risk status defined by a referral source. There are eight slots for protective service children. During the period data was collected at this day care center, from November 1991 through July 1992, all eight slots were filled. Due to confidentiality considerations, the status of eligible study participants along these lines was not revealed. These children and their mothers were in the pool of mothers asked to participate in the study.

The Children's Center meets the study's criteria of serving demographically diverse families. Located on the University of Tennessee, Knoxville, campus, services are provided to socioeconomically, racially, culturally, and educationally diverse families. No overall demographic data were available regarding the clients of the center. Thirty-five percent of the 31 non-drug-addicted mothers in this study were from the Children's Center.

The University of Tennessee Child Development

Laboratories are operated by the Child and Family Studies Department within the College of Human Ecology, the University of Tennessee. Each of the infants and toddlers are assessed for developmental strengths and weakness using instruments developed by the staff of the Laboratories, and programming is tailored for their individual needs. None of the pool of infants or children whose mothers met the criteria for participation in this study were reported by the director or teachers to be at risk for developmental delay.

Licensed by the Tennessee Department of Human Services, and accredited by the National Academy of Early Childhood Programs, a division of the National Association for the Education of Young Children, The Child Development Laboratories offer three programs: one for infants, one for toddlers, and one for preschoolers. The pool of subjects from which non-drug-addicted mothers volunteered for this study was drawn from the Infant Center, which serves up to 10 families with infants from 6-weeks to 15 months of age, and a Toddler Program serving up to 15 children from 16 months to 3 years old.

The University of Tennessee Child Development Laboratories meet the study's criteria of serving demographically diverse families. Located on the University of Tennessee, Knoxville, campus, services are provided to

socioeconomically, racially, culturally, and educationally diverse families. No overall demographic data were available regarding the clients of the Infant Center or the Toddler program. Twenty-six percent of the 31 non-drug-addicted mothers in this study were from the U.T. Child Development Laboratories.

The Church Street United Methodist Church Child Day Care Center is focused on the developmental progress of 2 to 6 year old children. Each child is assessed for developmental strengths and weaknesses using instruments developed by the center's staff. Activities are planned according to each child's developmental abilities. None of the pool of children whose mothers met the criteria for participation in this study were reported by the director or teachers to be at risk for developmental delay. Licensed by TDHS, the Church Street day care serves up to 45 children.

The Church Street United day care meets the study's criteria of serving demographically diverse families. It is located on the edge of the University of Tennessee, Knoxville, campus, and serves socioeconomically, racially, culturally, and educationally diverse families. No overall demographic data were available regarding the clients of the program. Ten percent of the 31 non-drug-addicted mothers in this study were from the Church Street Day Care Center.

The Central Baptist Church of Fountain City Early

Childhood Center program focuses on the care and development of children ages 6 weeks through 4 years old. There are 16 slots available for infants in this program. Each child is assessed using the E-Lap (Glover et al., 1978), and the focus of the program is on assisting the children at their own stages of development to grow to their fullest potential. Licensed by the TDHS, the infant center division of this program serves up to 18 infants and children ages 15 months to 24 months old. This infant center division is the group from which non-drug-addicted mothers volunteered to participate in this study.

The director and teachers indicated that several of the children were assessed as high risk for developmental delay due to their family histories, but asked that no further information be revealed in this study. No information is available of incidence of assessed high risk or reasons for this assessment.

The Central Baptist Church day care does not meet the study's criteria of serving demographically diverse families. This day care was chosen to address concerns that blue collar mother-child dyads might be underrepresented in the comparison group using the previous day care centers described. It is location in north Knoxville, and provides services to predominately blue collar, Black and White families. No overall demographic data were available

regarding the clients of the center's toddler program. Nineteen percent of the 31 non-drug-addicted mothers in this study were from the Fountain City Early Childhood Center toddler program.

PeeWee's Playhouse provides child care for infants and children 3 months to 12 years old. While there is no developmental assessment routine, programming is sensitive to the individual needs of each child. The director and teachers informally assess that more than half of the children served are high risk for developmental delays due to chaotic home environments and poverty. Their assessments are not supported by test results, however. Licensed by TDHS, Pee Wee's Playhouse serves up to 30 children.

Pee Wee's Playhouse does not meet the study's criteria of being serving demographically diverse families. Due to concern regarding underrepresentation of Black mothers in the comparison group, Pee Wee's Playhouse was chosen for this study. It is located in east Knoxville, and serves predominately socioeconomically disadvantaged Black families. No overall demographic data were available regarding the clients of Pee Wee's Playhouse. Ten percent of the 31 non-drug-addicted mothers in this study were from Pee Wee's Playhouse.

Subjects

Great Starts Mothers

The research group was composed of 39 polydrug-addicted mothers who had infants and/or young children up to three years old. These mothers were all clients at Great Starts from August 1991 through May 1993.

Requirements for admission to Great Starts included a documented history of drug addiction from either an addiction treatment center, a detoxification unit, a judge, parole or probation officer, hospital or Health Department personnel, or a Department of Human Services (DHS) worker. Great Starts admitted pregnant addicts and addicted mothers who had recently (within three years) given birth to children who had been prenatally exposed to drugs. Housing was provided for a maximum of one year for each client and one to three of her children under 10 years old.

Prior drug addiction treatment was not a requirement for admission. Clients who had completed a drug-treatment program were admitted the same as clients who had never been involved in addiction treatment. Admission criteria did not require that mothers have custody of all of their children. Women who were involved with DHS regarding child custody retention or previous loss of custody were also admitted to Great Starts. In instances where a mother did not have custody of the target child, Great Starts staff worked with

the mother while she was a resident to establish visitation and eventual reunification.

At admission each client was informed of program policies and procedures. The intake process included completion of a Bio-Psycho-Social History, an Intake Data Form, the Adult-Adolescent Parenting Index, the Parenting Stress Index, Hudson's Index of Self-Esteem, the Parent-Child Interaction Form, and the Kansas Parental Satisfaction Scale. All the information gathered during intake was used to develop individual client treatment plans and for program evaluation. Each client was informed that intake/admission involved face-to-face interviews with the staff intake worker, completion of self-administered questionnaires, and observation of parent-child interaction by Great Starts Therapeutic Day Care staff.

Great Starts required daily involvement of each mother with her child in the Great Starts day care center. This involvement included feeding (bottle and/or snack), diaper changes and/or toilet training, and engaging the infants and children in face-to-face interaction. This involvement provided staff the opportunity to observe mother-child interaction during the 10 to 14 day intake assessment period.

Comparison Mothers

The comparison group was composed of 31 non-drug-addicted mothers who had infants and/or young children up to three years old. These mothers had children who were enrolled in one of the five data collection sites for this dissertation from August 1991 to August 1993.

Parental agreement to participate in this study followed the research review process required by each day care center. Each mother was asked to sign a "Consent to Participate" form (See Appendix D). Once the director of each day care center provided written consent for their parents' involvement, questionnaire packets were supplied to the director for distribution to the parents eligible to participate, i.e. parents with infants and young children (up to three years old).

Upon receiving her questionnaire packet, each comparison mother was advised orally and in writing of the purpose of the research and the procedures to be followed should she decide to voluntarily participate. Each comparison mother was informed that completing the self-administered questionnaires and being observed by her child's teacher during normal uninterrupted interaction with her child in the day care setting were part of the research protocol.

Each non-drug-addicted mother was observed while engaged in feeding (bottle or snack), diaper changes and/or

toilet training, and face-to-face interaction with her infant or child during the one week period the mother took to complete the questionnaire packet. Observation occurred over the period of a week to insure that as many interactions of interest occurred as possible. No one mother, for example fed her child in the day care setting every day. This approach, then offered the staff the opportunity to observe feeding at least once during that week. At the end of this observation period, the teacher responsible for doing the observing rated mother-child interaction using the Parenting-Child Interaction Form (PCIF) (Lief, and the staff of the New York Medical College, Department of Psychiatry , 1976, 1985). This approach possibly introduced a rater effect due to the raters knowing the purpose of the study and knowing which mothers were addicted and which mothers were not. For example, a rater knowingly rating drug-affect mother-child interaction may rate the mother "low" on evidence of permitting age-appropriate exploratory activity, because of her own stereotype of drug-addicted mothers being overly controlling and punitive. The observation protocol is described in more detail in the Data Collection section of this chapter.

Instrumentation

The measures used in this dissertation were:

1. Demographic Data Sheet
2. Pregnancy History
3. Adult-Adolescent Parenting Inventory (AAPI)
4. Parenting Stress Index-Short Form (PSI)
5. Parent-Child Interaction Form (PCIF)

Each of these instruments is discussed below along with their reliability and validity histories and the reasoning behind their use in the Great Starts program and in this dissertation.

Demographic Data Sheet

The **Demographic Data Sheet** (See Appendix A) was designed specifically for the collection of demographic data from comparison group subjects. This one-page form and directions were included in each questionnaire packet distributed to volunteer comparison group participants as a self-administered instrument. The form was used as a work sheet by this dissertation researcher to glean demographic information from the Great Starts program evaluation records. The program evaluation records provided the data base for information on the research group of polydrug-addicted mothers and their prenatally-drug-exposed infants and young children. The demographic information obtained on

the form included race, sex, age, marital status, level of education, income and number of children.

Pregnancy History

The **Pregnancy History** (See Appendix A) was designed by the program evaluator specifically for use by Great Starts staff during intake/admission. The form was completed by the intake worker with each client during face-to-face interviews. The Pregnancy History functioned as a self-administered questionnaire to obtain pregnancy history information from the non-drug-addicted comparison mothers.

Each mother was asked to respond to questions regarding her most recent pregnancy and pregnancy history, including type and extent of prenatal care received, number of pregnancies, complications during most recent pregnancy, age at first pregnancy, and level of involvement of the target child's father. For Great Starts respondents, the target child was identified by Great Starts staff as the mother's youngest child exposed prenatally to drugs. For comparison group respondents, the target child was identified as the mother's youngest child. The office and home phone numbers of this dissertation researcher were provided should the comparison group mother have any questions or desire any further direction. Items on the form also asked for infant and child information, including sex, age, foster care and other placement history, birth

weight, prematurity, prenatal drug exposure, and types of drugs exposed to. Information was also collected on family support and on age of mother at first pregnancy.

Adult-Adolescent Parenting Inventory

The **Adult-Adolescent Parenting Inventory (AAPI)** (Bavolek, 1984) (See Appendix A), a self-administered paper and pencil form, was used to measure subject's parenting beliefs. Each Great Starts mother completed the form for the first time during the ten to fourteen day intake period. To meet the program's need for follow-up data, each mother also completed the form at three, six, nine, and twelve months. The form was distributed by the parent educator, and each mother was given verbal instructions on how to complete it. The mothers had the option to complete the form in the classroom setting or in the privacy of their Great Starts apartment, returning the form the next time parenting class convened. The parent educator was trained in administration of the AAPI and was available to help clients who had difficulty reading. Comparison mothers received the AAPI in their questionnaire packets as a self-administered form with the accompanying written instructions. The office and home phone numbers of this dissertation researcher were provided should the comparison group mother have any questions or desire any further direction.

Information from the AAPI indicated the degree respondent agreed or disagreed with abusive parenting patterns. The dimensions of parenting beliefs assessed included Inability to be Empathically Aware of Children's Needs, Belief in the Value of Corporal Punishment, Inappropriate Expectations of Children, and Family Role-Reversal. Raw scores are compiled using a scoring scheme of assigning a value of 1 to all Strongly Agree responses, 2 to all Agree, 3 to all Uncertain responses, 4 to all Disagree responses, and a value of 5 to all Strongly Disagree responses (Bavolek, 1984). A total score of 32 to 160 is possible. Data analysis for this dissertation was conducted using the total AAPI score.

Low AAPI scores are indicative of inappropriate expectations, lack of empathy, strong belief in the value of corporal punishment, and family role reversal. Parents with low AAPI scores may not understand the normal child growth and development and the capabilities of children. These parents may have fears of spoiling their children and may desire to make their children act right with strong discipline techniques including hitting, spanking, and slapping. These parents may also be demanding, controlling, exhibit low self esteem, and may experience high levels of stress related to their parenting role (Bavolek, 1984).

High AAPI scores are indicative of appropriate expectations, appropriate empathy, strong belief in

alternatives to corporal punishment, and appropriate family roles. Parents with high AAPI scores understand child growth and development and the capabilities of children. They are democratic in establishing rules for their children, and tend to have their needs met appropriately by other adults, not counting on their children for comfort. These parents are supportive of their children's development and needs, nurturing, positive, feel good about themselves, and may experience their role as parent as less stressful when compared to the low scoring parent (Bavolek, 1984, 1990a).

The dimensions of the AAPI are, however, most commonly associated with abusive parenting practices (Bavolek, 1984; Fox et al., 1987), and have not been empirically tested using the responses from samples of polydrug-addicted mothers. Normed on over 2000 adults and 6500 adolescents from a nationwide sample (including separate samples of abusive and non-abusive adults, and abused and non-abused adolescents), the AAPI has proven to be valid and reliable in detecting maladaptive parenting attitudes and beliefs, and it has high discrimination power between abusive and nonabusive groups (Bavolek, 1984, 1990a; Corcoran, and Fischer, 1987; Fox et al., 1987).

The AAPI was used in this dissertation for three reasons. First, it is incorporated into the Great Starts intake and evaluation protocol to assess changes in client's

parenting attitudes before, during, and following program involvement. Second, the AAPI is currently used in similar AIA funded programs across the country. This is being done to facilitate the development of a nationwide AIA data base utilizing the same instruments. Third, because the AAPI is a valid and reliable measure of maladaptive parenting beliefs, with proven discriminatory power in samples of abusive and nonabusive adolescents and adults (Bavolek et al., 1979, 1984, 1990a), this author proposed that the AAPI may also be able to discriminate between abusive and nonabusive mothers within samples of polydrug addicted mothers.

This third reason is very important to the decision to use the AAPI in this dissertation, and is related to the conflicting evidence found in current formulations of the relationship between addiction and child abuse. Several authors posit that child abuse and addiction go hand in hand (Bavolek and Henderson, 1990; Bresnahan, 1991); others posit that the pattern of interaction between prenatally-drug-exposed infants and their mothers ranges widely from healthy to maladaptive (Householder, 1980; Jeremy and Bernstein, 1984). Still other authors have found no difference between drug addicted mothers and non-drug-addicted mothers on their parenting attitudes and beliefs (Bauman and Dougherty, 1983). This conflicting state of the literature suggests that the AAPI may be invaluable towards increasing our

knowledge about within- and between-group differences in parenting beliefs of polydrug addicted mothers.

This state of this literature also suggests an analysis of the data in this dissertation using a one-way ANOVA and/or an ANCOVA. The statistical analysis used to address this issue and the results are discussed in Chapter V.

Reliability

Using coefficient alpha as discussed by Nunnally (1967), Bavolek (1984) reported reliability information for the AAPI based on a total sample of 6,694 adolescents. His findings indicate an internal consistency reliability of .70 for the construct of inappropriate expectations of children, .75 for the construct of inability to be empathically aware of children's needs, .81 for the construct of belief in the value of corporal punishment, and .82 for the construct of family role-reversal. He also reported reliability information for a total sample of 2,021 adults, indicating an internal consistency reliability of .75 for the construct of inappropriate expectations of children, .82 for the construct of inability to be empathically aware of children's needs, .85 for the construct of belief in the value of corporal punishment, and .86 for the construct of family role-reversal. No reliability coefficient for the total AAPI score was found in this review of the literature.

Validity

Murphy (1980) reported content validity information for the AAPI based on the judgments of 12 experts. In his discussion of "a score below which intervention would be necessary" (p. 31), Murphy, noted that this cut score was derived using a panel of 12 experts who arrived at a consensus on the scoring of each item in the inventory in terms of indicator of abusive parenting attitudes and beliefs. The procedure used to set cut scores was the Angoff method (Angoff, 1971; Maurer et al., 1991). Following judgements, a cut score of 91 was set for the AAPI (based on a possible total score of 32 to 160). Respondent scores falling below 91 were indicative of abusive parenting attitudes, above 91 were indicative of appropriate parenting attitudes. Of 761 college students administered the AAPI, Murphy found that 126 scored below the cut score of 91.

Bavolek (1984, 1990a) also reported information on the ability of the AAPI to discriminate among different groups. In one study, using multivariate analysis of variance (MANOVA) and discriminant function analysis, he determined that there was a significant overall mean difference ($p < .001$) across the four factors between abused and non-abused adolescents who were not parents ($N=91$). In another study, using the same statistical analysis, he determined that there was a significant overall mean difference ($p < .001$) across the four AAPI dimensions between abusive and non-

abusive adults (N=71). In sum, Bavolek found that the parenting and child rearing attitudes of abused adolescents and abusive parents measured by the AAPI were significantly more abusive than the attitudes of non-abused adolescents and non-abusive parents.

In a sample of adolescents enrolled in secondary schools in Baltimore (N=2,415), Bavolek (1980) found that the AAPI discriminated significantly ($p < .001$) between males and females. In this same study, AAPI successfully discriminated between adolescents enrolled in jail school and pregnant teens who were enrolled in the local high school. Scores for males indicated more abusive attitudes than the scores for females. In another study of adolescent mothers (N not provided) with three to 19-month old infants, Clark (1982) found that there were major differences between age groups on the AAPI. Older mothers, in Clark's study, showed significantly healthier attitudes toward parenting, as compared to the younger group. Murphy (1980) found that the AAPI discriminated between college students who held inappropriate attitudes toward parenting and college students who held healthier attitudes toward parenting (total N=761), when controlling for age, class, sex, marital status, race and religion.

Parenting Stress Index-Short Form

The **Parenting Stress Index-Short Form (PSI)** (See Appendix A) was developed by Richard R. Abidin (1990) and is a self-administered paper and pencil instrument used to identify parent-child systems under stress and at-risk for dysfunctional parenting. Data analysis for this dissertation was conducted using the total PSI score. As with the administration of the AAPI, the PSI was given to each Great Starts mother by the staff parent educator. The mother was given the option to complete the form in the classroom setting or in the privacy of her Great Starts apartment. The parent educator was available to answer any questions and to help clients who had difficulty with reading. The PSI and directions were included as a self-administered instrument in each questionnaire packet distributed to volunteer comparison group participants. The office and home phone numbers of this dissertation researcher were provided should the comparison group mother have any questions or desire any further direction.

The PSI is used to measure the degree of parenting stress each mother was experiencing at the time she completed the form. The PSI was developed for use with parents of children under 10 years of age, one of several reasons it was appropriate for this dissertation research. The PSI is slated, just as the AAPI is, for use in similar AIA funded programs across the country.

A total stress score ranging between 36 and 180 is calculated for each respondent by giving a numerical value of 1 to all items rated "Strongly Disagree," 2 to all items rated "Disagree," 3 to all items rated "Not Sure," 4 to all items rated "Agree," items, and 5 to all items rated "Strongly Agree." The scoring schema is consistent with the scoring schema in the test manual provided by Abidin (1990). Four dimensions of parenting can be examined within the total stress score derived: Parental Distress, Parent-Child Dysfunctional Interaction, Difficult child, and Defensive Responding.

The total stress score provides a measure of the overall level of parenting stress the mother was experiencing in her role as parent. Analysis for this dissertation was conducted using the total PSI score. Abidin (1990) states "the PSI does not include stresses from other life roles and life events" (p. 19). High total stress scores are indicative of mothers experiencing a lack of confidence and competence in their parenting role. These mothers may feel that their children are negative influences in their lives and they feel their children have characteristically difficult temperaments, are defiant, noncompliant, and demanding (Abidin, 1990). Abidin also suggests that a total stress score of above 90 is indicative of clinically significant levels of stress. He does not, however, present the process used to establish this cut

score. It might be assumed that an Angoff (1971) method was used to develop this and other cut scores used to make clinical decisions regarding total parent stress and stress related to each subscale. This assumption follows from Abidin's discussion of content validity, that "following initial item construction, panel of six professionals in the area of early parent-child relations rated each item for relevance of content and adequacy of construction" (p. 16). It also follows that Abidin uses percentiles for developing his interpretation of clinical cut scores. He indicates that scores between the 15th and 75th percentiles are in the normal range of parenting stress and scores above the 75th percentile are indicative of elevated parenting stress levels, and warrant further assessment of the parent-child system and referral for relevant services.

The Difficult Child PSI subscale assesses the temperamentally based behavioral characteristics of the children as perceived by their mothers. This subscale also assesses the child's self-regulatory capacity. Abidin (1990) suggests that scores above 36 on this subscale are indicative of mothers having "difficulty managing their child's behavior in terms of setting limits and gaining the child's cooperation" (p. 21). He also suggests that high scores on the Difficult Child scale "produced by parents of children below 18 months of age suggested the child may have had significant problems in self-regulatory processes. In

most instances these difficulties were considered to be temperament related" (p. 21).

The Parental-Child Dysfunctional Interaction subscale measures the degree of satisfaction the mother derives from interaction with her child. It also assesses the degree to which respondents feel their child does not meet parental expectations. Abidin suggests that scores above 27 are indicative of an inadequately established or threatened parent-child bond, and scores above 30 suggest the potential for child neglect or physical abuse.

The Defensive Responding scale measures the degree to which the mother attempts to present a favorable picture of herself and attempts to minimize indications of problems or stress in her relationship with her child. Abidin (1990) suggests that a score of 10 or below suggests the mother is trying to portray herself as a competent individual free of the normal emotional stresses associated with parenting, caring for a child, and in her relationships with others, including her spouse/significant other. A drug addicted or non-drug-addicted mother scoring high on this scale would be interpreted as being "unable to acknowledge the frustrations, annoyances and pressures of parenting. The picture is one of an over-controlled individual who denies the reality that parenting is difficult work" (Abidin, 1990, p. 19).

Reliability

In an extensive search of the empirical literature published since 1990, no studies were found to provide further insight into test reliability or the validity of the PSI short form. A review of reliability information on the full-length form is provided below.

The full-length PSI, from which the subset of PSI Short- Form items is drawn, does have a significant body of validity studies. In a study examining the relationship between the level of parenting stress experienced by mothers of children during their child's second year of life (N=119) and the frequency and appropriateness of the health care they obtained for their child, Abidin and Wilfong (1986) reported an alpha reliability coefficient of .95 for the full-length PSI Total Stress score.

In a study mentioned early, examining the perception that highly stressed mothers (N=56) make more frequent and more inappropriate use of medical services, Abidin and Wilfong (1989), found the perception to be invalid for the middle class, largely well-educated sample of mothers of young children. The PSI was administered as the measure of maternal stress. An alpha reliability of .70 was reported for the total stress score. A correlation analysis including the total PSI score, an Index of Child Health Care score, family income, mothers' level of education, and child's age, the authors found no significant correlations.

The possibility of a confounding of income, level of education, and availability of quality health care are not considered by Abidin and Wilfong. Their findings suggest possible confounding in light of evidence of such in the literature reviewed throughout this dissertation.

Using data from a sample of 800 subjects, Abidin (1990) reported an internal validity alpha coefficient of .91 for the Total Stress Score. In their examination of social support as a mediator of chronic parenting stress, Quittner, Glueckauf, and Jackson (1990) used the PSI-Long Form. In their study the PSI demonstrated moderate to high internal consistency, with alpha values ranging from .60 to .96. The authors did not report the corresponding alpha levels for each domain or the Total Score. Robbins et al. used the PSI full-length form to examine the relationship between mother-reported stress and child progress in the context of children with autism. The authors, however, did not report information on the internal consistency of the PSI.

Validity

Content validity was achieved in the development of the PSI long- and short-form using the judgements of a panel of experienced clinicians in the development of the items. A panel of early parent-child relations professionals rated each item for its consistency with information relative to infant development, parent-child interaction, child abuse

and neglect, child psychopathology, child management practices, and stress (Abidin, 1990). Once these items were field tested, PSI-Short Form items were distilled from the full-length form and a correlation analysis conducted. Subscales from the short form correlated with their respective long form subscales, with coefficients ranging from .50 to .92.

Abidin (1990) reports that "at present, the PSI-Short Form does not, by itself, possess a body of independent research that supports its validity. However, given that it is a direct derivative of the full-length PSI, it is likely that it will share in the validity of the full-length PSI" (p. 16-17).

Parent-Child Interaction Form

The **Parent-Child Interaction Form (PCIF)** (See Appendix A), formerly entitled the Maternal Input Scale, developed by Lief (1974), was used to evaluate the effectiveness of a parenting program for addicted mothers, and to compare change over time in the parent-child interaction of drug addicted and non-addicted mothers. Lief (1976) stated that these evaluation objectives were accomplished by using the PCIF, which assesses "the physical, emotional, and social development of children and their parents' roles in fostering and enjoying that development" (p. 38). The PCIF was created for use by addiction treatment staff, in

conjunction with a parent-training curriculum, as an assessment and treatment planning tool.

The PCIF was similarly used by Great Starts day care staff as a measure of appropriate parent based parent-child interaction skills, and as an assessment and treatment planning tool. The director of the Great Starts Therapeutic Day Care found the three dimensions of the PCIF (discussed below) to be congruent with the overall parent training goals and philosophy of the Great Starts program. Completion of the form allowed day care staff to systematically share insights into mother-infant interaction with the treatment team so that appropriate treatment planning for mother and child could occur.

A total parent-child interaction score ranging between 12 and 60 is calculated for each respondent. Data analysis for this dissertation was conducted using the total PCIF score. High scores on the PCIF suggest high evidence of appropriate, mutually satisfying, growth enhancing, and healthy parent-child interaction. Low scores suggest the absence of the same. The PCIF is a Likert-type scale with five response categories on a "no evidence" (receiving a value of 1) to "high evidence" (receiving a value of 5) continuum. A revised version of the PCIF (Lief, 1985) uses a different rating schema, making the form more consistent with the treatment team decision-making process. The revised PCIF was not available when the form was

incorporated into the Great Starts evaluation protocol. The old version was therefore used for observations with the Great Starts mothers as well as the comparison mothers.

The PCIF measures three broad dimensions of maternal behavior in the context of parent-child interaction: Experiences Provided, Attitudes, and Developmental Issues. These headings are highly abstract, and are made more functional with the use of subcategories of behaviors and parent-child interaction. Each dimension and its accompanying subcategories of behavior is reviewed below.

The dimension of "Experiences Provided" assesses maternal input into parent-child interaction. This dimension contains a subset of six categories: Physical Care of Child, Patterning and Sequencing, Input of Motor and Sensory Stimulation, Input of Language and Communication, Permits Exploration, and Guides Social Relations with Others. This dimension addresses issues including mother's attention to diet, hygiene, and safety; adhering to a consistent pattern of feeding, bathing, playing, and sleeping; playing with and talking to the infant or child; eliciting vocal and physical response from the infant or child; permitting age-appropriate exploratory activity; and permitting and supervising play with peers.

The dimension of "Attitudes" addresses maternal outcome issues, i.e. her behavior as a by product of the feed back she receives from her child following her initial "input"

into the interaction. The focus is on maternal attitudes about child development and her role as parent, as reflected in interaction with her child. This dimension contains a subset of three categories: Interest in Achievement and Mastery, Enjoyment of Child as Person, and Maternal Self-Concept and Role. The "Attitudes" dimension also addresses issues including mother's encouragement of the child in achieving developmental milestones, the degree of pleasure she derives during her interaction with the child, her relating to the child as an individual and not an extension of herself, and her self-confidence in the role she plays as mother.

The dimension of "Developmental Issues" addresses infant outcome issues as impacted by maternal behavior, using the categories: fostering of trust, individuation and separation, and conscience mechanisms. These categories deal with infant behaviors as they are reinforced by the interaction of mother with her child. This dimension addresses issues including mother's meeting the child's security needs, soothing and responding to the child's hunger and other cues, allowing the development of the child's age appropriate sense of autonomy, and setting appropriate boundaries and limits.

Lief et al. (1985; 1991) rated their program participants immediately following observation by a small group of staff members which included several observers and

one or more group leaders. The behaviors were discussed and numerical ratings arrived at by consensus of the group. The Great Starts day care staff rated the mothers at the end of the ten to fourteen day intake/observation period. The day care teacher in charge of the children of comparison group mothers rated the mothers at the end of the week during which the questionnaire packet was distributed to the mothers and returned to the researcher. The ratings were made while mothers interacted with their children during feeding (bottle or snack time), diaper changes and toilet training activity, and in face-to-face interaction including talking, explaining, consoling, or playing.

During training on the use of the PCIF, several teachers indicated that categories such as the "Physical Care of Child" requested information on behavior not typically observed in the day care setting such as establishing regular sleep, feeding, bath, and play routines. During training, however, it was found that although not easily observable, all of the behaviors in the PCIF could be observed to some degree in the day care setting. For example, a mother would be rated low on the PCIF, Physical Care dimension who did not provide the number of bottles necessary so that her infant could be fed as many times as he/she was hungry during the day; or if the child was observed to frequently arrive at the day care in dirty clothes; or if the child frequently arrived at the day care

tired from lack of sleep.

The PCIF calls for observers to rate mothers on some behaviors that are not frequently or directly amenable to direct observation in the day care setting may still be considered a limitation in using the form. As one example, to rate the evidence or lack of evidence that a mother "establishes regular sleep, feeding, bath, and play routines" may be beyond the observer's abilities, or may require some degree of inference by the observer given the limits of some day care settings. Either can result in missing data as observers feel they cannot rate mothers on a particular dimension, or a degree of inference by individual raters which may result in low instrument reliability and resulting validity problems.

The use of mothers' self-report on established sleep, feeding, bath, and play routines as collateral information in making PCIF ratings introduces concerns about construct validity in the use of self report in making ratings on an instrument designed to provide observational data. There is ample evidence in the literature that human beings are not generally accurate observers of themselves (Good and Scates, 1954; Babbie, 1986). Each observer was encouraged during training to depend upon observable behavior in making ratings.

By providing an indepth description of each category of behavior to be rated, Lief (1976) enabled observers to

engage in conversation with mothers about the patterns and schedules used in interaction with their children. When aspects of the category were not easily or frequently observed, the informal discussion with mothers of each dimension of behavior (observed and not observed) offered the raters in this dissertation the opportunity to make ratings with some degree of confidence.

The resources were not available to use more than one observer for each mother-child dyad in this dissertation. This presents a limitation in light of earlier observer concerns that some degree of inference would be necessary to rate mothers on categories that included behaviors not easily or usually observed in the day care setting. A further limitation in this dissertation involves the lack of rater-rater reliability of observation on the PCIF.

Instrument training was conducted and the extensive category descriptions provided by Lief (1976) reviewed to help each observer in her task of rating mother-child interaction on the PCIF. This limitation extends to the inability to examine or present inter-rater reliability data. We cannot be sure that the PCIF information gathered by a sole Great Starts rater is not biased in some fashion, nor can we be sure that the PCIF data from the various day care teachers is not biased in some fashion. Training was conducted in an effort to limit the degree of inference and bias that entered the rating task.

Reliability

In a longitudinal study examining the nature of children's early development and early parent-child interactions as they contributed to children's subsequent development and sense of well-being, Lief et al. (1990) followed small groups of mothers and their infants who had participated in their early childhood development center program from 1974 to 1978 (N=138). Repeated measures on 68 of the 138 families resulted in a total of 529 PCIF ratings, which were used to evaluate the internal reliability of the instrument. Using Cronbach's alpha, Lief (1978, 1991) found high inter-item reliability with a coefficient alpha of .93 for the first year of the program, and .95 for the second year of the program, and .94 for the third year of the program.

In a 1976 report of preliminary findings concerning the effectiveness of a parenting program for addicted mothers, Lief reported that the reliability of the PCIF based on individual judgements in comparison with consensus judgements was 73 percent interrater agreement. Lief and Zarin-Ackerman (1976), in their examination of the effectiveness of parenting education with risk and non-risk mothers and infants using the PCIF, found that in a sample of 68 mothers the scale was able to discriminate between mothers of differing socioeconomic backgrounds.

Validity

In a 1989 follow-up study to examine the contribution of children's early development, and early parent-child interactions to children's subsequent development and sense of well-being, Lief et al. (1991) interviewed 68 of the original 136 families involved in their parenting training program between 1974 and 1978. Previous measures were compared with data on their functioning at follow-up. Data from the earlier administrations of the PCIF were found to be significant and highly correlated with the six outcome measures: child's report of well-being ($r=.59$, $p < .05$); mother's report of child's well-being ($r=.50$, $p < .05$); mother's assessment of child's school adjustment ($r=.48$, $p < .05$); mother's report of school grades; mother's assessment of child's emotional adjustment; and child's report of grade average. The authors suggest that this follow-up data (using PCIF rating of the mothers when the children were two years old and comparing it to data gathered fourteen years later) provides evidence of the validity of the PCIF.

Data Collection

Great Starts Mothers

The 39 polydrug-addicted subjects from Great Starts did not have direct contact with the researcher. Instead, secondary data in the form of Great Starts program evaluation records were used in this research. The data used were extracted from existing Great Starts case records after all identifying information was removed. A client identification number specifically for the Great Starts Evaluation Project was used to identify all Great Starts client information.

Each Great Starts mother was provided the AAPI and PSI, among other instruments, as part of the intake process. Following several interview and evaluation sessions with the intake worker, mothers were seen by a parent-educator who provided directions for self-administration of these questionnaires. Each questionnaire was completed by the mothers either in the classroom setting provided or in their individual apartments and then returned to the parent-educator, who scored them privately. Once scored, the questionnaires were copied. All identifying information was removed from the copies, which were then forwarded by mail to the program evaluator. The process of observing parent-child interaction in the Great Starts setting is discussed later in this chapter.

In the case of mothers who had more than one drug-exposed child, the youngest child was identified as the target child for the questions in each questionnaire. The youngest drug-exposed child was initially chosen by Great Starts staff as the target child due to medical record keeping needs. Use of a target child was discovered by staff to be the best way to help mothers with more than one child understand how to approach responding to numerous questionnaire items, such as "My child doesn't seem to smile as much as most children," or "My child rarely does things for me that make me feel good," both PSI questions. Information from the program evaluation records included addiction history, pregnancy history, parenting information, parent-child interaction information, self-esteem, and infant development information.

Information from the Parent-Child Interaction Form (PCIF) was also a part of the program evaluation data available for use in this dissertation. During the ten- to fourteen-day intake assessment period, each mother was observed interacting with her child by a day care director, who was responsible for completing the PCIF form. The observation protocol used is described below.

Comparison Mothers

The 31 non-drug-addicted mothers from the five day care centers did not have direct contact with the researcher. Instead, they were surveyed by a self-administered questionnaire packet from their child's day care director. The survey packet included a letter requesting voluntary participation and explaining the purpose of the study. The letter further explained that refusal to participate would not affect her or the child's status in the day care center. Each prospective comparison group participant received a questionnaire packet that included a demographic information sheet, a consent form, a pregnancy history form, the AAPI, and the PSI.

The reader is referred to Appendix A for a sample of the comparison group cover letter, informed consent form, and all questionnaires used. A client identification number specifically for this research was used to identify comparison subjects' responses. Data collection sheets contained only identification codes including the first three letters of respondent's first name. Participants' last names did not appear on any research documents. If the comparison mothers had two or more children, the youngest child was designated as the target child for the questions in each instrument.

During the data collection period, each mother was observed interacting with her child by the day care teacher

who was primarily responsible for her child. The PCIF rating was arrived at solely by the single observer for each mother-child dyad. The teacher involved with each child whose mother volunteered to participate in this research was trained to administer the PCIF.

Table 1 shows the number and percentages of comparison parents who consented to participate in this research. The data refer to the number of respondents rather than the number of day care programs. Of the 69 total possible comparison mothers, 45 percent (or 31 mothers) agreed to participate.

Table 1. Comparison Group Participation Rates
by Site

Comparison Group Subjects	Site1	Site2	Site3	Site4	Site5
Possible	22	16	8	18	9
Actual	11	8	3	6	3
Percent from site	50%	50%	38%	33.3%	33.3%

Site1=Children's Center
 Site2=Child Development Laboratories
 Site3=Church Street United Methodist Church
 Site4=Central Baptist Church of Fountain City
 Site5=PeeWee's Playhouse

Observation

Polydrug-addicted and non-drug-addicted mothers were observed in interaction with their children in both the Great Starts and other day care center settings: during feeding (bottle or snack time), diaper changes and toilet training activity, in face-to-face interaction including talking, explaining, consoling, or playing. The observer role was minimally obtrusive during observation (i.e. scoring was not done while mother and child were interacting; the observer observed from a distance; and observation of mother-child interaction was built into the routines of each of the day cares making unobtrusive observation possible). At some time during the observation period, however, staff also engaged each subject in conversation about sleeping, feeding, bathing, and play routines during the observation period.

Observation in the Great Starts day care setting occurred during the intake/assessment period of ten to fourteen days, and during the week of receipt of the questionnaire packet, in the five comparison group data collection sites. These time frames were established in both settings to insure that as many interactions of interest occurred as possible. No one mother, for example fed her child in the day care setting every day or had time to give her infant a bottle or participate in snack time on a daily basis. This approach, then, offered the staff the

opportunity to observe feeding, a diaper change, or toilet training interaction at least once during that week. At the end of this observation period the teacher responsible for observing rated mother-child interaction using the Parenting-Child Interaction Form (PCIF) (Lief, 1985). After the PCIF was completed, Great Starts staff forwarded a copy of the form to be included in the program evaluation files, while day care staff attached the form to the completed questionnaire packet of each volunteer participant.

There is an important limitation related to this observational approach. Great Starts PCIF data were collected during the initial ten to fourteen days of involvement in the program, i.e. the intake/assessment period. The data, then, depicts the level of competence these polydrug-addicted mothers had in interaction with their children at the beginning of rehabilitation and parent training involvement. The comparison group PCIF data was, conversely, collected following a period of involvement in day care centers that stress frequent parent-teacher interaction and focus on enhancing child development. A question regarding length of day care involvement should be included in questionnaire protocols for future research endeavors. This type of data would permit the comparison of groups in the context of degree of program exposure to alternative parent-child interaction information. In sum, this first limitation involves the degree to which Great

Starts mothers and comparison mothers have had opportunities to learn from day care staff about child development and how to improve the quality of their interaction with their children.

CHAPTER V

RESULTS

Overview

In this chapter the research hypotheses are discussed in light of the dissertation results. The overarching research question focuses on whether or not there is a difference between polydrug-addicted mothers and non-drug-addicted mothers in the pattern of interrelationships among parenting beliefs, parenting stress, and parent-child interaction (i.e. the correlations are different in the two populations), when mother's income level, level of education, race, age, number of children, and child's prematurity status are held constant.

The data were computer analyzed using the Statistical Analysis System (SAS) (SAS Institute, 1990-1993). The correlational procedure available in the SAS (Version 6.0) program was employed to develop chi-square and t-test analyses of differences between groups on the demographic variables and the Cronbach's Alpha estimates of reliabilities. The Statistical Analysis System was also used to develop zero-order and partial correlation matrices.

Data analyses are presented in four sections. First, sample characteristics are discussed, followed by their

related statistical tests. Demographic data for the polydrug-addicted Great Starts mothers were compared to demographic data compiled by the Abandoned Infants Assistance (AIA) program for the 32 AIA funded programs. Comparisons were made of parenting beliefs, parenting stress, and parent-child interaction scores between the two groups. Second, zero-order correlations are presented with their related statistical tests and power analyses. Next, partial correlations are discussed, followed by their related statistical tests and power analyses.

As this dissertation was an exploratory study of the interrelationships among parenting beliefs, parenting stress, and parent-child interaction in the context of maternal polydrug addiction, the .10 level of significance was used to test statistical hypotheses. While .05 is the traditionally accepted criterion for statistical significance, the lower level of significance (.10) was used to provide more power to detect differences between the two groups of mothers. The lower level of significance was also used in consideration of the exploratory nature of this research and the low power given the small sample size ($n=39$ polydrug-addicted mothers and $n=31$ non-drug-addicted mothers).

Any findings considered significant were clearly tentative pending replication. Using the higher level of significance decreased the probability of making a Type II

Error. The possibility of Type II Error was considered of greater consequence than Type I Error, because it could shut the door on future lines of research (Huck et al., 1974, Schlotzhauer and Littell, 1987; Vogt, 1993).

Sample size was critical to having a good chance of detecting a statistically significant \underline{r} . Because of the small sample size in this study, the risk taken here was on the side of making a Type I Error and decreasing the probability of making a Type II Error. For example, the power to detect a population \underline{r} of .30 at $\alpha=.05$ using $n=31$ non-drug-addicted mothers would be about .38. Ideally the power would be at the conventional criterion of .80 (Cohen, 1977). If $\alpha=.05$ (two-tailed test), and the population $\underline{r}=.30$, then 84 non-drug-addicted mothers would be required to achieve a power of .80. Clearly $n=31$ was a small sample size to use to detect a population \underline{r} of .30. By increasing the α to .10, using $n=31$ non-drug-addicted mothers would give a power of about .51 to detect a population $\underline{r}=.30$.

Sample Characteristics

Of the 70 subjects in this dissertation, 39 were polydrug-addicted mothers with infants and children up to three years old involved in Great Starts and the Great Starts therapeutic day care; 31 subjects were non-drug-addicted comparison mothers with infants and young children enrolled in other day care centers in Knoxville, Tennessee. This discussion focuses first on the demographic information for both groups of mothers. The demographic information for both groups is reported in Tables 1 and 2. Table 2 provides a profile of mothers in both groups, including information on complications during their most recent pregnancy (i.e. carrying target child), birth weight, prenatal exposure of target child to drugs/alcohol, when the fetus was exposed, and to what drugs the fetus was exposed.

The Polydrug-Addicted Mothers

The mean age of the polydrug-addicted mothers was 27.4 (SD=5.19), with a range from 19 to 37. The mean number of years of education for this group of mothers was 11.5 (SD=1.90), with a range from 8 years to 16 years. The racial composition of this group was 38.5 percent Black and 61.5 percent White. The marital composition was 48.7 percent single, 10.3 percent married, 38.5 percent divorced and/or separated, and 2.6 percent widowed.

Table 1. Demographic Characteristics of Polydrug-Addicted and Non-Drug-Addicted Mothers

	Group			
	Polydrug-Addicted (n=39)		Non-Drug-Addicted (n=31)	
	<u>frequency</u>	<u>%</u>	<u>frequency</u>	<u>%</u>
Race/Ethnicity				
Black	15	38.46	8	25.80
White	24	61.54	23	74.20
Marital Status				
Single	19	48.72	3	9.68
Married	4	10.26	26	83.87
Divorced/Separated	15	38.46	2	6.45
Widowed	1	2.56	0	0
Level of Education				
Grade 8 or Less	2	5.13	0	0
Some High School	14	35.90	1	3.22
High School Graduate	14	35.90	3	9.70
Some College	7	17.95	11	35.48
College Graduate	1	2.56	4	12.90
Past BA or BS	0	0	8	25.80
GED	1	2.56	4	12.90
Income				
less than \$5,000	35	89.74	2	6.45
\$5,001-\$7,500	3	7.70	2	6.45
\$7,501-\$10,000	0	0	1	3.23
\$10,001-\$12,500	0	0	1	3.23
\$12,501-\$15,000	1	2.56	0	0
greater than \$15,000	0	0	26	83.87
Age				
16-21 years old	6	15.4	3	9.6
22-26	13	33.4	4	12.8
27-31	12	30.8	13	42
32-37	8	20.4	11	35.6
Number of Children				
1 child	12	30.77	23	74.19
2 children	12	30.77	5	16.13
3 children	9	23.07	3	9.68
4 children	2	5.13	0	0
5 children	2	5.13	0	0
6 children	2	5.13	0	0
Birth Status of Child*				
Full-term	28	71.79	25	80.65
Premature	11	28.21	6	19.35

*Data is on target child only (i.e. child mother most recently gave birth to that fits the age criterion for inclusion in this study)

Table 2. Other Background Information, Polydrug-Addicted and Non-Drug-Addicted Mothers

		Polydrug-Addicted Mothers (n=39)			Non-drug Addicted Mothers (n=31)		
		n	f	%	n	f	%
Complications	during pregnancy	39	18	46.15	31	9	29.03
	most recent						
	Unknown/record incomplete	39	21	53.85	31	0	0
Low Birth Weight							
	(under 5.5lbs or 85 oz.)	39	8	20.51	31	1	3.22
	Under Average, but above low birth weight	39	16	41.03	31	15	48.59
	Unknown/record incomplete	39	8	20.51	31	0	0
Prenatal Drug Exposure		39	39	100	31	0	0
When was Fetus Exposed							
	1st trimester only	39	2	5.13	31	0	0
	2nd trimester only	39	3	7.69	31	0	0
	3rd trimester only	39	4	10.26	31	0	0
	1st and 2nd trimester	39	5	12.82	31	0	0
	1st and 3rd trimester	39	1	2.56	31	0	0
	Through all trimesters	39	14	35.90	31	0	0
	Unknown/record incomplete	39	10	25.64	31	0	0
Fetus Exposed to							
	Alcohol	39	4	10.26			
	Cocaine/Crack	39	10	25.64			
	Tranquilizers	39	1	2.56			
	Alcohol & Marijuana	39	3	7.69			
	Alcohol & Cocaine	39	8	20.51			
	Alcohol & Tranquilizers	39	1	2.56			
	Marijuana & Cocaine	39	2	5.13			
	Opiate & Cocaine	39	1	2.56			
	Tranq., Mariju., Cocaine	39	1	2.56			
	Alcohol, Mariju., Cocaine	39	3	7.69			
	Unknown/record incomplete	39	5	12.82			

The educational composition included 41 percent who had completed some high school, 36 percent were high school graduates with no further education, and 21 percent had post-high school education. Three percent of the polydrug-addicted mothers had obtained their GED. The primary means of financial support for the polydrug-addicted mothers (89.7%) was medicaid and AFDC. These mothers all reported incomes of less than \$5,000 a year.

The mean number of children given birth to by the polydrug-addicted mothers was 2.4 (SD=1.39), with a range from 1 to 6. The target child for the polydrug-addicted mother was the youngest child exposed prenatally to drugs. Prematurity status information for the 39 target children of the polydrug-addicted mothers included 71.8 percent full-term births and 28.2 percent premature births.

The Non-Drug-Addicted Mothers

The mean age of the non-drug-addicted mothers was 29 (SD=5.10), with a range from 16 to 37. The mean number of years of education for this group of mothers was 15.5 (SD=2.50), with a range from 11 to 22. The racial composition of this group of comparison mothers was 25.8 percent Black and 74.2 percent White. The marital composition was 9.7 percent single, 83.9 percent married, and 6.5 percent divorced and/or separated.

The educational composition of the non-drug-addicted mothers was 3.2 percent who had completed some high school, 9.7 percent were high school graduates with no further education, and 74.2 percent had post-high school education. Thirteen percent (12.9%) of this comparison group of mothers had obtained their GED. The primary means of support for the non-drug-addicted mothers (83.9%) was a family income of greater than \$15,000 a year.

The mean number of children given birth to by the non-drug-addicted mothers was 1.35 (SD-.66), with a range from 1 to 3. The prematurity status of the 31 target non-drug-exposed children of this group included 80.6 percent full-term births and 19.4 percent premature births.

Comparison of the Two Groups on Demographic Variables

The chi-square two-independent-sample test was used to examine differences between the polydrug-addicted and non-drug-addicted groups on demographic characteristics including race, marital status, income, and prematurity status of child. A Cramer's V, a chi-square-based measure of association, was also computed for each chi-square test to provide a measure of the degree of association between mother's addiction status (polydrug-addicted and non-drug-addicted) and her race, marital status, income, and prematurity status (Craft, 1990; SAS, 1990).

Analyses of the data suggested that there were no differences between the group of polydrug-addicted mothers and the group of non-drug-addicted mothers in racial make up, age of mothers, and the prematurity status of target children. The data did suggest, however, that there were statistically significant differences between the groups on marital status, income, number of years of education, and number of children. The chi-square test for nominal and categorical variables and the t-test for interval level variables were used to determine differences between the groups on each demographic variable. The results of these statistical analyses are presented below.

The proportion of Black mothers in the polydrug-addicted group was 38.46 percent, while the proportion of Black mothers in the non-drug-addicted group was 25.81

percent [χ^2 (1) = 1.22, $p > .10$], a statistically nonsignificant difference. The proportion of single mothers in the polydrug-addicted group was 48.72 percent, while the proportion in the non-drug-addicted group was 9.68 percent. The proportion of married mothers in the polydrug-addicted group was 10.26 percent, while in the non-drug-addicted group it was 83.87; the proportion of divorced/separated mothers in the polydrug-addicted group was 2.56 percent, while in the non-drug-addicted group it was zero percent. The proportion of widowed mothers in the polydrug-addicted group was 5.13 percent, while in the non-drug-addicted group it was zero percent. A chi-square was derived for the entire marital status variable [χ^2 (3) = 38.30, $p < .10$], a statistically significant result. The Cramer's V ($V = .740$) suggested a strong association between mother's addiction status and her marital status.

The proportion of mothers in the polydrug-addicted group reporting incomes of less than \$5,000 yearly was 89.74 percent, while in the non-drug-addicted group it was 6.45 percent. The proportion of mothers in the polydrug-addicted group reporting incomes of greater than \$15,000 was zero percent, while it was 83.87 percent in the non-drug-addicted group [χ^2 (4) = 57.47, $p < .10$]. These are statistically significant differences. The Cramer's V ($V = .960$) suggested a very strong association between mother's addiction status and her income.

The proportion of mothers in the polydrug-addicted group with target infants or children who were full-term was 71.79 percent, while it was 80.64 percent in the non-drug-addicted group. The proportion of mothers in the polydrug-addicted group with target infants or children who were premature was 28.20 percent, while in the non-drug-addicted group it was 19.35 percent [$\chi^2 (1) = .7359, p > .10$]. These are statistically nonsignificant differences.

The two-sample t-test was used to compare the two groups on years of education, age, and number of children. Hartley's F_{\max} (Yaremko, 1982; SAS, 1990) was used to test the tenability of the assumption of homogeneity of variance for this test. The two-tailed t-tests revealed that there were significant differences, at the .10 alpha level, between the two groups on mean years of education and mean number of children, but no difference between the two groups on mean age of the mothers. This information is reported in Table 3.

The mean number of years in school for mothers in the polydrug-addicted group was 11.51 ($SD=1.9$), and 15.53 ($SD=2.5$) for non-drug-addicted mothers [$t (68) = -7.64, p < .10$], a statistically significant difference.

The mean age of mothers in the polydrug-addicted group was 27.36 ($SD=5.2$), and 29.03 ($SD=5.1$) for non-drug-addicted mothers [$t (68) = -1.35, p > .10$], a statistically nonsignificant difference. The mean number of children that

mothers in the polydrug-addicted group reported giving birth to was 2.38 (SD=1.4), and 1.35 (SD=.66) for non-drug-addicted mothers [$t(56.9) = 4.09$ (unequal variances), $p < .10$], a statistically significant difference.

Table 3. T Test for Difference between Groups on Number of Years of Education, Age, and Number of Children

Group	N	Variable	Mean	Std. Dev.	Variance	T	df	Probability
Polydrug Addicted	39	Yrs.Edu.	11.51	1.9				
					Equal [F _{max}	-7.6384* (38,30) = 1.73,	68	.0000 p > .10]
Non-drug Addicted	31	Yrs.Edu.	15.53	2.5				
Polydrug Addicted	39	Age	27.36	5.2				
					Equal [F _{max}	-1.3501 (38,30) = 1.03,	68	.1814 p > .10]
Non-drug Addicted	31	Age	29.03	5.1				
Polydrug Addicted	39	NumKids	2.38	1.4				
					Unequal [F _{max}	4.0867* (38,30) = 4.41,	56.9	.0001 p < .10]
Non-drug Addicted	31	NumKids	1.35	.66				
*significant at .10 significance level								

In sum, mothers in both groups were more likely to be White and to have a full-term child. The racial makeup of both groups reflected the racial makeup of Knoxville, Tennessee and the occurrence of prematurity reflected current trends in East Tennessee (Vickers and Cunningham,

1993). The polydrug-addicted mothers in this sample were less educated, poor, and more likely to be single parents with more than one child. The non-drug-addicted mothers were better educated, financially more secure, and more likely to be in two-parent families. The implications of these differences for parenting stress and parent-child interaction were important.

The polydrug-addicted mother was likely to be experiencing a pileup of stressors without an availability of personal resources including education, income, and spousal or "significant other" support. Information regarding the degree of immediate and extended family support available to these mothers was not available in this analysis to provide further insight into the support system of the polydrug-addicted mothers. Analysis of the data suggested that the polydrug-addicted mothers were more likely to experience higher levels of stress related to parenting. Because of the generally greater number of personal and parenting stressors, withdrawal from drugs, and the responsibilities of parenting a drug-exposed child, these mothers were more likely to be distracted, easily frustrated, anxious, and to exhibit less positive interactional behaviors with their children.

The data suggested that the non-drug-addicted mothers were not likely to be stress free, however. Because their children were in day care, it was likely that these mothers

were working full- or part-time, raising children, and were involved in a spousal relationship, each of which requires part of her attention, time and energy. Responsibility for fewer children, more income, and higher education, however, offered these mothers greater access to information about parenting and child development and some buffer from personal and parenting stressors (McGillicudy-DeLisi, 1985).

Comparison of Dissertation Sample to National AIA Sample

The purpose of this dissertation was to begin to address the lack of empirical information on the parenting beliefs, parenting stress, and parent-child interaction of polydrug-addicted women. It was important, then, to consider the extent to which the findings of this dissertation were relevant to polydrug-addicted mothers outside of this sample of 39. In order to draw conclusions about the general population of polydrug-addicted women using the results of this dissertation research, the sample would have had to have been a random sample from the general population of all polydrug-addicted mothers.

The obtained sample of 39 polydrug-addicted mothers was not a random sample from a given population of polydrug-addicted mothers. The lack of random sampling created problems of generalizability or external validity. Based on the circumscribed sampling procedures used and the data

collected on the 39 polydrug-addicted mothers, conclusions about the interrelationships among parenting beliefs, parenting stress, and parent-child interaction could not clearly be generalized from this dissertation to all polydrug-addicted mothers in the United States.

In this dissertation generalization referred to the possibility of generalizing from the responses of the 39 polydrug-addicted mothers on parenting beliefs and parenting stress measures and scores on the parent-child interaction observation measure to the responses of a larger group of polydrug-addicted mothers. The extent to which conclusions about the broader population of polydrug-addicted mothers could be made was dependent, in part, on how similar the sample was to the general population. The characteristics of all polydrug-addicted mothers in the U.S. was empirically unknown (Feig, 1991; Barth et al., 1993).

A number of sample characteristics were known, however, about 2082 polydrug-addicted mothers involved in AIA-funded rehabilitation programs across the country. With the availability of AIA sample information, the process of logical generalization offered one way to increase the ability to make inferential comments from results found in this dissertation. The dissertation sample, however, did differ significantly from the national AIA sample; thus, generalizations could not be made using information from the dissertation sample of 39 polydrug-addicted mothers about

the national population of AIA polydrug-addicted mothers.

Demographic data compiled for the 1993 AIA Grantees Conference were used to support this logical generalization discussion. The AIA data were compiled in the form of percentages by the AIA Resource Center. The data covered the clients served by all 32 AIA-funded programs for fiscal year 1991 and fiscal year 1992. The Z test for differences between proportions (Cohen and Cohen, 1983; Capon, 1988; Kanji, 1993) was used to test for demographic differences between the dissertation group of polydrug-addicted mothers (from Great Starts fiscal years 1 and 2), and AIA mothers from all 32 AIA programs across the country (from AIA program fiscal years 1 and 2).

Table 4 provides a summary of the dissertation sample and AIA sample data for polydrug-addicted mothers with the corresponding Z scores from the tests for difference between proportions. The Z's found to be significant at the alpha 0.10 level, indicating significant differences between the dissertation group and the national AIA population of polydrug-addicted mothers, were those for the proportion of Black, White, Hispanic, Native American, and Other or Unknown race; income; reported maternal prenatal drug use, and alcohol use. The two groups were similar on the proportion of cocaine/crack, marijuana and "other substances" used, birth weight, and birth status reported for target children.

Table 4. Distribution of National Sample (AIA) Mothers and Great Starts Mothers on Demographic Variables

Type of Mother Dissertation Sample Great Starts Mothers (<u>n</u> =39)		National Sample AIA Mothers (<u>n</u> =2082)	<u>Z</u> Score
(Percentage)		(Percentage)	
Race			
Black	38.5	58.6	-2.5219*
White	61.5	22.9	5.6237*
Hispanic	0	11.9	-2.2924*
Native American	0	1.3	-2.4108*
Other or Unknown	0	5.3	-6.5640*
Income			
AFDC	89.7	62	3.5404*
Prenatal Drug Use	100	65	4.5599*
Substance Used ^a (reported at Intake)			
Cocaine/Crack	64.10	65	- .1167
Marijuana	23.08	20	.4759
Alcohol	48.72	37	1.5001*
Other Drugs	10.26	12	- .3317
Birth Characteristics (reported for Target Child)			
Low Birth Weight	20.51	29	-1.2087
Premature	28.2	25	.4569

^aCategories may overlap, i.e., a mother may have used cocaine, marijuana, and alcohol.

*significant at alpha=.10

In sum, the Great Starts sample reflected the unique social and ethnic makeup of the East Tennessee Appalachian area, and the AIA sample reflects a sample drawn typically from larger, more densely populated urban areas including Washington, D.C., New York City, Los Angeles, Boston, and several cities in Florida. The Great Starts mothers were

possibly a reflection of the predominantly White, and generally lower SES of the Appalachian region (Vickers and Cunningham, 1993). The calculated poverty threshold for single persons living in Tennessee in 1991 was \$6,532, and \$13,359 for a family of four (Vickers and Cunningham). This statistic suggested that the poly-drug-addicted mothers in this dissertation sample fell well below the poverty threshold. The fact that 100 percent of the Great Starts mothers and only 65 percent of the AIA mothers reported prenatal drug use may have been an artifact of Great Starts admission criterion. Prenatal drug exposure was an admission criterion for Great Starts while it may not have been for every AIA program. The Great Starts sample was similar to the AIA sample in the types of substances used and the birth characteristics of the target children.

The results from the analysis of the interrelationships among parenting beliefs, parenting stress, and parent-child interaction in the sample of 39 polydrug-addicted mothers were not generalizable to the national population of AIA polydrug-addicted mothers. Differences among programs may have presented problems in generalizability because each program was from a different part of the country with its own demographic peculiarities. The Appalachian makeup of East Tennessee differs from the predominantly Black and Hispanic make-up of Miami, Florida, for example.

The results presented in Tables 5 through 7 are the number of observations (N), mean scores, and standard deviations for total scores on the parenting beliefs, parenting stress, and parent-child interaction measures.

Table 5. Means, Standard Deviations, Number of Observations, and Minimum and Maximum Scores for the Total Sample on measures of Parenting Beliefs, Parenting Stress, and Parent-Child Interaction

Research Instrument	Variable/	N	Mean	Standard Deviation	Minimum	Maximum
Parenting (AAPI) ^a	Beliefs	70	128.21	18.27	84	160
Parenting (PSI) ^b	Stress	70	82.83	17.77	49	124
Parent-Child Interaction (PCIF) ^a		70	42.27	12.10	14	60
^a Higher Score Optimal = appropriate beliefs, evidence of appropriate parent-child interaction ^b Lower Score Optimal = low stress						

Table 6. Means, Standard Deviations, Number of Observations, and Minimum and Maximum Scores for the Polydrug-Addicted Mothers on measures of Parenting Beliefs, Parenting Stress, and Parent-Child Interaction

Research Instrument	Variable/	N	Mean	Standard Deviation	Minimum	Maximum
Parenting (AAPI) ^a	Beliefs	39	125.38	19.09	84	160
Parenting (PSI) ^b	Stress	39	91.49	15.67	54	124
Parent-Child Interaction (PCIF) ^a		39	34.87	9.35	14	60
^a Higher Score Optimal = appropriate beliefs, evidence of appropriate parent-child interaction ^b Lower Score Optimal = low stress						

Table 7. Means, Standard Deviations, Number of Observations, and Minimum and Maximum Scores for the Non-Drug-Addicted Mothers on measures of Parenting Beliefs, Parenting Stress, and Parent-Child Interaction

Research Instrument	Variable/	N	Mean	Standard Deviation	Minimum	Maximum
Parenting (AAPI) ^a	Beliefs	31	131.77	16.80	94	160
Parenting (PSI) ^b	Stress	31	71.93	13.96	49	101
Parent-Child Interaction (PCIF) ^a		31	51.58	8.08	26	60
^a Higher Score Optimal = appropriate beliefs, evidence of appropriate parent-child interaction ^b Lower Score Optimal = low stress						

Comparison of the Two Groups on AAPI, PSI, and PCIF Scores

Analysis of the data suggested that there were no differences between the two groups on the measure of parenting beliefs (AAPI). The data did suggest that there were statistically significant differences between the groups on the measures of parenting stress and parent-child interaction. The results of these statistical analyses are presented below.

The two-sample t-test was used to compare the AAPI, PSI, and PCIF scores for the two groups. This information is reported in Table 3 on page 213. The mean AAPI score for mothers in the polydrug-addicted group was 125.4 ($SD=19.1$), and 131.77 ($SD=16.8$) for non-drug-addicted mothers [$t(68) = -1.46$, $p > .10$], a statistically nonsignificant difference.

The mean PSI score of mothers in the polydrug-addicted group was 91.5 ($SD=15.7$), and 71.9 ($SD=13.9$) for non-drug-addicted mothers [$t(68) = 5.44$, $p < .01$], a statistically significant difference. The mean PCIF score for mothers in the polydrug-addicted group was 34.9 ($SD=9.3$), and 51.6 ($SD=8.1$) for non-drug-addicted mothers [$t(68) = -7.88$, $p < .01$], a statistically significant difference.

Parenting Beliefs

In sum, the polydrug-addicted mothers and the non-drug-addicted mothers in this sample held similar beliefs about parenting, children, and child development. Mothers in both

groups typically scored in the high range, suggesting appropriate expectations, appropriate empathy, strong beliefs in alternatives to corporal punishment, and appropriate mother-child role expectations. The scores of mothers in both groups suggested that they tended to understand child growth and development and the capabilities of their children.

These results are somewhat surprising in light of the cognitive-behavioral model, and support previous findings in the literature regarding the parenting beliefs and attitudes of drug-addicted mothers. Cognitive behaviorism would suggest that mothers from different socioeconomic levels, of different ages, and different cultural backgrounds would hold different beliefs about parenting, beliefs unique to the environment within which they were reared and in which they have lived. A theoretical analysis of these results is discussed further in Chapter VI.

Parenting Stress

The polydrug-addicted mothers in this sample tended to experience higher levels of parenting stress than the non-drug-addicted mothers. Although the mean group PSI score for the polydrug-addicted mothers fell within the normal range of parenting stress, it was slightly higher than Abidin's (1990) suggested cut score of 90. This suggested that their stress levels were not critical, but some degree

of intervention would help to relieve these mothers' parenting stress. The PSI scores for the non-drug-addicted mothers did not suggest that they were stress free, however. Their scores also fell within the normal range of parenting stress and typically below Abidin's cut score. This cut score was used with caution, however, as it was derived using the scores from two samples of mothers (total $N=800$) utilizing pediatric services in a small city in Virginia, which resulted in concern that sample statistics may not generalize across samples. In other words, the derived cut score for Abidin's sample of mothers may differ significantly from a similarly derived cut score for this dissertation sample.

A higher mean stress score for the polydrug-addicted mothers was not surprising given their financial status, their lower level of education, the fact that they were predominantly single mothers of more than one child, and that they had been admitted to Great Starts following court, hospital, DHS, or other intervention in their lives. The lower mean stress score for the non-drug-addicted mothers may have reflected the fact that they typically had only one child, were typically living well above the poverty level, had a higher level of education, and the support of a spouse.

The initial impact of participation in Great Starts may be reflected in these results on the parenting stress scale.

The fact that the polydrug-addicted mother had recently entered a residential treatment facility that had parent education as a primary focus may have positively impacted how she responded at intake/admission to questions assessing stress in her relationship with her child on the PSI. The polydrug-addicted mother in this sample had a stable living situation, albeit temporary, support from other polydrug-addicted mothers going through the same treatment, and various levels of staff support including emotional, transportation, child care and advocacy. These four components were consistently cited in the literature as the most important ingredients to intervening with this population (Bauman, 1980; Shikles, 1990; Rieder, 1990; Feig, 1991; Davidson, 1991; Barth et al., 1993). It is also possible that stress related to nonparental functioning would explain more of the variability in parent-child interaction than would parenting stress such as financial or interpersonal.

These results further suggest that the observed difference in mean parent stress score may be an under-estimation of what would be found in a sample of polydrug-addicted mothers not involved in a rehabilitation program such as Great Starts. An interesting line for future research would involve taking measures of parenting stress and comparing the mean stress scores for polydrug-addicted mothers in rehabilitation programs and polydrug-addicted

mothers who are not involved in a program.

These PSI results and suppositions about polydrug-addicted mother's levels of stress were in line with findings reported in the literature. Burke and Abidin (1980), like LeMasters (1965), in their respective examinations of stress in early non-drug affected parent-child relationships, found that lack of preparation and training for parenthood, along with socioeconomic instability and social isolation, contributed to the degree parents were vulnerable to various parenting role stressors. This would suggest that polydrug-addicted rehabilitation program participants who were having needs met would evidence lower levels of stress than polydrug-addicted mothers who remained in the community and were actively using drugs.

Parent-Child Interaction

The polydrug-addicted mothers in this sample were observed to have more deficits (lack of evidence of competency) in parent-child interaction than the non-drug-addicted mothers. The lower scores of the polydrug-addicted mothers suggested that they were observed to show less attention to the physical care of their children, less consistency in daily feeding, sleeping, and play routines, and impatience in teaching and allowing their infants and children freedom of exploration. The lower scores of the

polydrug-addicted mothers also suggested that they were more likely to experience less pleasure from their children's growth and development, and felt less confident in their role as mothers. Again, these scores could be underestimates of deficits in parent-child interaction relative to polydrug-addicted mothers not involved in a rehabilitation program.

Table 8. T Test for Difference between Groups on Total AAPI, PSI, and PCIF Scores

Group	N	Variable	Mean	Std. Dev.	Variance	T	df	Probability
Polydrug Addicted	39	AAPI	125.38	19.09				
Non-drug Addicted	31	AAPI	131.77	16.80				
					Equal (F _{max})	-1.4658 (38,30)	68 = 1.29,	.1473 p > .10)
Polydrug Addicted	39	PSI	91.49	15.67				
Non-drug Addicted	31	PSI	71.93	13.96				
					Equal (F _{max})	5.4384* (38,30)	68 = 1.26,	.0000 p > .10)
Polydrug Addicted	39	PCIF	34.87	9.35				
Non-drug Addicted	31	PCIF	51.58	8.08				
					Equal (F _{max})	-7.8820* (38,30)	68 = 1.34,	.0000 p > .10)

*p < .0001

Analysis of Covariance

The two-sample t-test results shown in Table 8, for differences between the groups for parenting belief scores, parenting stress scores, and parent-child interaction scores did not take demographic variables into consideration. The absence of any studies in the literature that examined parenting beliefs, parenting stress, and parent child interaction in the context of parental polydrug-addiction while partialling mothers' race, income, number of years of education, age, number of children and child's prematurity

status, offered a unique opportunity to extend what has previously been done in the field. Analysis of covariance and partial correlation analyses using regression/correlations techniques were conducted to meet this opportunity.

An analysis of covariance was conducted using regression techniques (Edwards, 1979; Cohen and Cohen, 1983). The following regression models were fit to the data:

$$\begin{aligned} \text{Parenting Beliefs} &= \beta_0 + [\text{covariate set}] + \text{Addiction Status} \\ \text{Parenting Stress} &= \beta_0 + [\text{covariate set}] + \text{Addiction Status} \\ \text{Parent-Child Interaction} &= \beta_0 + [\text{covariate set}] + \text{Addiction Status} \end{aligned}$$

Nonsignificant terms suggested that, when controlling for all other variables, the partial coefficients for these variables were zero (Cohen and Cohen, 1983). Hence the nonsignificant terms were deleted and the more parsimonious models refit with the following results.

The difference in adjusted means between the two groups in terms of parenting beliefs, when holding race, age, income, education, number of children, and child's prematurity status constant was statistically nonsignificant [$t(62) = .36, p < .72$].

The difference in parenting stress between the two groups was statistically significant [$F(1,66) = 19.60, p \leq$

.0001]. The difference in adjusted means between the two groups in terms of level of stress, when holding number of years of education and number of children constant, was 22 [$t(66) = -4.43, p \leq .0001$]. In other words, after controlling for education and number of children, polydrug-addicted mothers in this sample had parenting stress scores that were 22 units higher than the non-drug-addicted mothers. The analysis of covariance suggested that number of years of education and number of children were the only covariates required in this model.

The difference in parent-child interaction between the two groups was statistically significant [$F(1,66) = 4.8, p \leq .0001$]. The difference in adjusted means between the two groups in terms of parent-child interaction, when holding mothers' race and income constant was 9 [$t(66) = 2.19, p < .05$]. In other words, after controlling for race and income, polydrug-addicted mothers in this sample had PCIF scores 9 units lower than the nonaddicted-mothers. The analysis of covariance suggested that mothers' race and income were the only covariates required in this model.

Results for The Overall Sample

Zero-Order Correlations

Examination of the data in a zero-order correlation matrix for the overall sample ($N=70$) indicated a correlation of about $+.23$ between parenting beliefs and parent-child interaction [$t(68) = 1.9, p < .10$] (significant at the $.10$ level), a correlation of about $-.27$ between parenting beliefs and parenting stress [$t(68) = -2.33, p < .10$] (significant at the $.05$ level), and a correlation of about $-.47$ between parenting stress and parent-child interaction [$t(68) = 4.4, p < .10$] (significant at the $.001$ level). These relationships are presented in Table 9 and are examined in more depth in the following discussion.

These data suggested that when income level, level of education, race, age, number of children, and child's prematurity status were not held constant, mothers, regardless of addiction status, tended to have larger values on the Parenting Stress Index (PSI) associated with lower values on the Adult-Adolescent Parenting Index (AAPI). In other words, when simply looking at the interrelationships between parenting beliefs and parenting stress, for the 70 mothers in this sample beliefs in the use of corporal punishment, lack of empathy toward children, and beliefs in

role reversal (low scores) were associated with high levels of parenting stress (high scores).

Table 9. Zero-Order Correlation Matrices for the Total Sample of Mothers

Zero Order Correlations (<u>N</u> =70)			
	Parenting Beliefs	Parenting Stress	Parent- Child Interaction
Parenting Beliefs	1.0	-.27153**	.22553***
Parenting Stress		1.0	-.47415*
Parent- Child Interaction			1.0

$\underline{r} = -.27$, \underline{t} (68) = -2.33, $\alpha = .10$, two-tailed test

$\underline{r} = -.22$, \underline{t} (68) = 1.9, $\alpha = .10$, two-tailed test

$\underline{r} = -.47$, \underline{t} (68) = 4.4, $\alpha = .10$, two-tailed test

Using Total AAPI, PSI, and PCIF scores

* $p < .001$

** $p < .05$

*** $p < .10$

This zero-order correlation analysis also revealed a negative relationship between parenting stress and parent-child interaction. It suggested that mothers, regardless of addiction status, tended to have larger values on the Parenting Stress Index (PSI) associated with lower values on the Parent-Child Interaction Form (PCIF). In other words, without holding other variables constant, for the 70 mothers in this sample high levels of stress (high scores) were associated with deficiencies in parent-child interaction (e.g., the provision of physical care, daily routines, teaching child, and experiencing pleasure from the child's growth and development) (low scores).

This zero-order correlation analysis also revealed a positive relationship between parenting beliefs and parent-child interaction. It suggested that mothers, regardless of addiction status, tended to have higher values on the AAPI associated with higher values on the Parent-Child Interaction Form (PCIF). In other words, without holding any other variables constant, for the 70 mothers in this sample appropriate parenting beliefs (high scores) were associated with high evidence of appropriate parent-child interaction (high scores), and inappropriate parenting beliefs (low scores) were associated with a lack of evidence of appropriate parent-child interaction (low scores).

The r^2 between parenting beliefs and parenting stress was .07, suggesting that about 7 percent of the variation in

parenting stress scores was linearly associated with, or overlapped variation in parenting belief scores. The r^2 between parenting stress and parent-child interaction was .22, suggesting that 22 percent of the variation in parent-child interaction scores was linearly associated with, or overlapped variation in parenting stress scores. The r^2 between parenting beliefs and parent-child interaction was .05 suggesting that 5 percent of the variation in parent-child interaction scores was linearly associated with, or overlapped variation in parenting beliefs scores. In total, these effects suggested that while significant, the associations among parenting beliefs, parenting stress, and parent-child interaction were relatively small.

The effect size found in the relationship between parenting beliefs and parent-child interaction ($r^2=.07$) in this dissertation was smaller than those found in other studies focusing on the same variables. The authors did not, however, use the same measures, which may explain some of the differences in findings. For example, Beckwith (1971), in a sample of adoptive ($n=12$) and natural mothers ($n=12$), found statistically significant relationships from $r=.41$ to $r=.78$ (at $p < .05$ and $p < .01$) between mother's attitudes and beliefs and mother's behaviors in both groups. Her effects, then, ranged from $r^2=.17$ to $r^2=.61$.

Endsley et al. (1979), in a nonaddicted sample of

nursery school and day care center dyads ($N=40$), found a statistically significant relationship ($r=-.37$, $p < .05$) between authoritarian attitudes and mother-child interaction. Their effect size was $r^2=.14$. Rickard et al. (1984), in their examination of parenting beliefs and parenting behavior in a sample of psychological clinic-referred ($n=16$) and non-clinic-referred ($n=88$) mother-child dyads, found statistically significant relationships between the two variables with r 's ranging from $-.21$ to $.41$, (p 's $< .05$). Their effect sizes ranged from $r^2=.04$ to $r^2=.17$.

The effect size found in the relationship between parenting stress and parent-child interaction ($r^2=.22$) in this dissertation was similar to that found in the one study focusing on the same variables that presented correlation coefficients. In an examination of maternal behavior and stress, in a sample of abusive and nonabusive families ($N=74$), Conger et al. (1984) found statistically significant correlations between parent-child interaction and stress experienced by the mothers, with r 's ranging from $.23$ to $-.53$. Their effect sizes ranged from $r^2=.05$ to $r^2=.28$.

Partial Correlation

Table 10. Partial Correlation Matrix for the Total Sample of Mothers

Partial Correlations (N=70)			
	Parenting Beliefs	Parenting Stress	Parent- Child Interaction
Parenting Beliefs	1.0	.16609	.03615
Parenting Stress		1.0	-.19877
Parent- Child Interaction			1.0
Using total AAPI, PSI, and PCIF scores			

The partial correlation matrix, shown in Table 10, for the overall sample suggested that after controlling for the six background variables (race, income, years of education, age, number of children, and child's prematurity status), some of the correlations found in the zero-order correlation matrix above were possibly spurious, resulting from a pattern of intercorrelations among demographic variables and parenting beliefs, parenting stress, and parent-child

interaction. None of these partial correlations were statistically significant at the .10 level. Correlations among the three primary variables and the six covariates are shown in Tables 11 and 12.

The results in Table 11 suggested that for the overall sample race was moderately associated with parenting beliefs and parent-child interaction; years of education, income, and number of children were correlated with parenting beliefs, parenting stress and parent-child interaction. The results in Table 12 suggested that for the overall sample age correlated with years of education, income, and number of children; years of education correlated with income and number of children; and income correlated with number of children. The results in Table 12 are consistent with discussions in the literature that suggest that parents living in poverty (when compared to middle- and upper-class parents) are most likely to be undereducated, to have less knowledge about family planning and less access to birth control (Schuster and Ashburn, 1980; Brown, 1981; Farran et al., 1980). Impoverished parents are also more likely to have more children to rear (Farran et al., 1980).

Table 11. Correlation Matrix for Parenting Beliefs,
Parenting Stress, Parent-Child Interaction and
the Covariate Set

Correlations (N=70)			
	Parenting Beliefs	Parenting Stress	Parent- Child Interaction
Race	.38*	-.11	.31**
Age	.15	-.08	.15
Number of Years of Education	.22***	-.30**	.48*
Income	.22***	-.48*	.69*
Number of Children	-.21***	.33**	-.35**
Prematurity Status of Target Child	-.04	.15	-.11
Using total AAPI, PSI, and PCIF scores			
*p ≤ .001			
**p ≤ .05			
***p ≤ .10			

Table 12. Correlation Matrix for Race, Age, Years of Education, Income, Number of Children and Prematurity Status of Target Child

Correlations						
(N=70)						
	Race	Age	Years of Education	Income	# of Children	Prematurity Status of Child
Race	1.0	-.06	.12	.17	-.07	-.17
Age		1.0	.35**	.27**	.27**	.08
Years of Education			1.0	.69*	-.47*	-.08
Income				1.0	-.36**	-.18
Number of Children					1.0	.11
Prematurity Status of Child						1.0
Using total AAPI, PSI, and PCIF scores						
*p ≤ .001						
**p ≤ .05						
***p ≤ .10						

Eight studies provided information on the relationship of demographic variables with measures of parenting behavior, and parenting beliefs. Relationships found in the literature are consistent with relationships observed in these dissertation results.

Beckwith (1971) found socioeconomic status (SES) was significantly correlated with parenting attitudes and beliefs in a sample of 12 adopted and 12 natural mother-infant dyads. Mohan (1981) found that number of children, age of mother, and mother's level of education were associated with parenting behavior. Conger et al. (1984) found income, number of children, education, number of parents and mother's age at first birth were related to parenting stress. Fu et al (1984) found race, income, and marital status influenced by maternal attitudes and beliefs. Rickard et al. (1984) found that SES was related to parenting behaviors in a sample of 16 clinic and 88 non-clinic referred mother-child dyads. In a sample of 122 parents ($n=61$ mothers), McGillicuddy-DeLisi (1985) found that mother's level of education was related to the parenting beliefs mothers held ($r=.22$, $p \leq .05$). DeLisi also found that number, spacing, ordinal position, and gender of children did not contribute significantly to either parenting belief or parenting behavior scores. Mash and Johnston (1990) found that number of children moderated parenting behavior. In a sample of 122 mothers and 67

fathers of 4 year olds in daycare/preschool, Mills and Rubin (1990) found that mother's occupational status and perceived support (including spousal support) were related to parent-child interaction strategies.

Multiple Regression/Correlation

A further analysis of the partial correlation results was conducted (see Table 13). A partial correlation analysis was conducted using multiple regression/correlation techniques (Edwards, 1979; Younger, 1979; Cohen and Cohen, 1983; Keppel and Zedeck, 1989). The following regression models were fit to the data:

$$\text{Parenting Beliefs} = \beta_0 + [\text{covariate set}] + \text{Parenting Stress}$$

$$\text{Parenting Stress} = \beta_0 + [\text{covariate set}] + \text{Parent-Child Interaction}$$

$$\text{Parent-Child Interaction} = \beta_0 + [\text{covariate set}] + \text{Parenting Beliefs}$$

These covariate sets included mothers' race, income, years of education, age, number of children and child's prematurity status. The nonsignificant terms were deleted and the more parsimonious models refit with the results shown in Table 13.

Table 13. Partial Correlation Analysis using
Multiple Regression/Correlation

(N=70)

	Parenting Beliefs	Parenting Stress	Parent- Child Interaction
Parenting Beliefs	1.0	.25*	-.10
Parenting Stress		1.0	-.23**
Parent- Child Interaction			1.0

*p < .05

**p < .10

Using total AAPI, PSI, and PCIF scores

A significant partial correlation (r=.25, p < .05) was found between parenting beliefs and parenting stress when race was held constant. The partial correlation analysis suggested that mothers' race was the only covariate required in this model. A significant partial correlation (r=-.23, p < .10) was found between parenting stress and parent-child interaction when income was held constant. The partial correlation between parenting beliefs and parent-child interaction was nonsignificant.

The partial correlation matrix derived for N=70 using multiple regression (Table 13) differs from the Pearson product-moment partial correlation matrix in Table 10. The

partial correlations between parenting beliefs and parenting stress, and parenting stress and parent-child interaction, were significant. Further, the sign changed on the coefficient for the relationship between parenting beliefs and parenting stress. The positive relationship suggested by the multiple regression/correlation analysis suggested that inappropriate parenting beliefs were associated with low levels of parenting stress. This finding was contrary to theoretical expectations and contrary to the findings of other authors. This inconsistency is discussed further in Chapter 6.

Results of Comparisons Between the Two Groups

Zero-Order Correlations

Table 14. Zero-Order Correlation Matrices for Polydrug Addicted Mothers and Non-Drug-Addicted Mother's Scores on Measures of Parenting Beliefs, Parenting Stress, and Parent-Child Interaction

Polydrug-Addicted Mothers (<u>n</u> =39)			Non-Drug-Addicted Mothers (<u>n</u> =31)		
Parenting Beliefs	Parenting Stress	Parent- Child Interaction	Parenting Beliefs	Parenting Stress	Parent- Child Interaction
Parenting Beliefs	1.0	-.17237	.14655	1.0	-.27905
Parenting Stress		1.0	-.17630		1.0
Parent- Child Interaction			1.0		1.0

While each of the correlations in the zero-order correlation matrix for the total sample (N=70) was significant, no statistically significant correlations were revealed in the separate zero-order correlation matrices (for parenting beliefs, parenting stress, and parent-child interaction) for either the polydrug-addicted mothers or the non-drug-addicted mothers. Table 14 presents these data.

These results should not be interpreted to mean there are no correlations among these variables in the populations represented by the groups. Rather, as will be discussed below, this study had low power to detect these correlations.

Examination of the zero-order correlation matrices for background variables for the polydrug-addicted mothers and the non-drug-addicted mothers suggested several significant associations in each group. For the polydrug-addicted mothers there were positive relationships between age and number of years of education ($r=.32645$, $p < .05$), and age and number of children ($r=.48818$, $p < .01$). The results indicated that the older the mother in this group, the more education she had. The results also indicated that the older the mother the more children she had. For the polydrug-addicted mothers there was a negative relationship between number of years of education and number of children ($r=-.27124$, $p < .10$), indicating that the more children mothers in this group had the fewer number of years of education they have had.

The findings of relationships among mother's age, number of years of education, and number of children were consistent with findings of a number of authors including Christiansen and Goldman's (1983) examination of expectancies versus demographic variables in predicting adolescent drinking; Reese and Wilborn's (1983) examination

of correlates of drug abuse in adolescents; Fox et al.'s (1987) examination of parenting attitudes of pregnant adolescents; Amaro's (1989) examination of drug use among adolescent mothers; and Bavolek's (1990) identification of high risk adolescents. It certainly makes sense that in the polydrug-addicted group the younger a woman was at the birth of her first child and the more children she had, the fewer number of years of education she was able to obtain. This is understandable particularly as these mothers subsist below the poverty level and are primarily single mothers with more than one child.

For the non-drug-addicted mothers there was a positive relationship between age and number of years of education ($r=.34183$, $p > .10$), indicating that the older the mother in this group, the more education she had. For the non-drug-addicted mothers there was a negative relationship between number of years of education and number of children ($r=-.39009$, $p < .10$), indicating that the more children mothers in this group had the fewer number of years of education they have had. It is interesting and makes sense that even for the non-drug-addicted group, with a higher average income and spousal support, the more children a woman had, the fewer number of years of education she was able to obtain.

Power Analyses

The importance of sample size to having a good chance of detecting a statistically significant population ρ was mentioned earlier in this chapter. Because of the small sample size in this dissertation, the risk taken here is on the side of wrongly rejecting a true null hypothesis (Type I Error) and decreasing the probability of wrongly accepting a false null hypothesis (Type II Error). The following discussion focuses on the power of the statistics, from the zero-order correlation matrices of each group, to detect significant population ρ 's.

The largest obtained correlation was about $-.28$ (see Table 14). The power to detect a population $\rho = -.28$ at $\alpha = .10$ in a sample size $n = 31$ is about $.51$. In this instance the sample size was not large enough to detect a significant ρ of the magnitude obtained for the relationship between parenting beliefs and parenting stress for the non-drug-addicted mothers. The power to detect a population correlation of smaller absolute value than this (i.e., smaller than $.28$) would be less than $.51$. One hundred-forty non-drug-addicted mothers would be required to detect a population $\rho = -.28$ with a power of $.80$. More non-drug-addicted mothers would be required to have a power of $.80$ to detect a population ρ less than $.28$ in absolute value.

Partial Correlations

Table 15. Partial Correlation Matrices for Polydrug-Addicted Mothers and Non-Drug-Addicted Mother's Scores (Controlling for race, income, education, age, number of children and prematurity status)

Polydrug-Addicted Mothers (<u>n</u> =39)			Non-Addicted Mothers (<u>n</u> =31)		
Parenting Beliefs	Parenting Stress	Parent- Child Interaction	Parenting Beliefs	Parenting Stress	Parent- Child Interaction
Parenting Beliefs	1.0	-.10670	1.0	-.38533*	-.18649
Parenting Stress	1.0	-.07751	1.0	1.0	-.22042
Parent- Child Interaction		1.0			1.0
r= -.38, t (29) = -2.25, p < .10, two-tailed test					

The partial correlations among parenting beliefs, parenting stress, and parent-child interaction, controlling for race, income, number of years of education, age, number of children, and child's prematurity status are presented in Table 15. The partial correlation between parenting beliefs and parenting stress for the non-drug-addicted mothers

appeared to be significant at the .10 level. These partial correlation results are discussed further in the following section.

Statistical Tests

The Student's t was used to determine the significance of the observed partial r values (see Table 15) (Cohen and Cohen, 1983; SAS, 1985). for the relationship between parenting beliefs and parenting stress and the relationship between parenting stress and parent-child interaction. For the partial correlation between parenting beliefs and parenting stress for the non-drug-addicted mothers ($n=31$), $r = -.38$, [t (29) = -2.25, $p < .10$], for the two-tailed test. None of the other partial correlations were statistically significant at the .10 level.

Fisher's Z test was used to test the significance of the difference between the partial correlation coefficients for the relationship between parenting beliefs and parenting stress obtained on the two subgroups of mothers (Champion, 1981; Cohen and Cohen, 1983). For the polydrug-addicted mothers, $r_{12.345678} = -.10670$, and for the non-drug-addicted mothers, $r_{12.3456789} = -.38533$. The Z was -1.1858, at $\alpha=.10$ (two-tailed test, critical value = 1.645), indicating that there is no significant difference between the partial correlation coefficients for the two groups.

Because the partial r for the polydrug-addicted group

was not statistically significant, it was set equal to zero. The significant partial correlation for the non-drug-addicted group remained $r_{12.3456789} = -.38533$, and the Fisher's Z test was conducted a second time. The resultant Z was -1.5811 , at $\alpha = .10$ (two-tailed test, critical value = 1.645), indicating no significant difference between the two partial correlations for the two groups.

Power Analyses

The power analysis conducted earlier for the zero-order correlations showed the low power associated with the small samples in this dissertation. The power to detect population partial r 's of the same magnitude as the zero-order correlations would be lower than it would be for the zero-order correlations. This is because error degrees of freedom would be used in the partialling process. Hence, the partial correlation analyses were also plagued by very low power.

The issue here was not simply one of statistical significance but of the practical significance of an observed relationship. A population correlation of $.11$ ($r^2 = .0121$) may not be considered practically important. No recommended magnitude of a population correlation defining practical significance for correlations between any of these variables appeared in the literature. Such a recommendation would prove useful to researchers. If correlations of

greater magnitude than those obtained in this research were defined as criteria for practical significance then the power characteristics of this research would be somewhat better.

Table 16. Partial Correlation Matrices for Polydrug-Addicted Mothers and Non-Drug-Addicted Mother's Scores (Controlling for income, education, number of children)

Polydrug-Addicted Mothers (<u>n</u> =39)			Non-Addicted Mothers (<u>n</u> =31)			
Parenting Beliefs	Parenting Stress	Parent-Child Interaction	Parenting Beliefs	Parenting Stress	Parent-Child Interaction	
Parenting Beliefs	1.0	-.15493	.14775	1.0	-.27966	-.01081
Parenting Stress		1.0	-.10111		1.0	-.09597
Parent-Child Interaction			1.0			1.0

Since there were no statistically significant differences between the two groups in terms of age, race, or birth status a second partial correlation matrix for each group was examined where these variables were not partialled. None of these partial correlations were statistically significant at the .10 level (see Table 16).

Reliability Tests

Reliability information for the total sample of 70 mothers using the Cronbach coefficient alpha indicates for the AAPI, an internal consistency of .85 for the construct of inappropriate expectations of children; .84 for the construct of inability to be empathically aware of children's needs; .84 for the construct of belief in the value of corporal punishment, .84 for the construct of family role-reversal; and .91 for the overall AAPI score.

Reliability information for PSI-Short Form data from 68 of the 70 mothers is now presented. Two mothers did not respond to two questions on the PSI, thus their cases were dropped from the coefficient alpha calculations in the SAS program. The coefficient alpha for the 68 mothers indicated an internal consistency of .86 for the total stress score. The alpha for the parental distress subscale was .84; for the parent-child dysfunctional interaction subscale it was .85; for the difficult child domain .84; and for the defensive responding subscale, .84. Reliability information for PCIF data for the total sample of 70 mothers indicated an internal consistency of .94 for the total parent-child score. The alpha for the Experiences Provided by Parent dimension was .86; for the Essential Parental Attitudes dimension, .87; for the difficult child domain, .84; and for the Child Developmental Issues dimension, .87.

Summary

Hypothesis 1: It was hypothesized that mothers' beliefs about parenting would be related to the degree of parenting stress they were experiencing. Zero-order correlation results for the overall sample ($N=70$) indicated a negative relationship between parenting beliefs and parenting stress ($r=-.27153$, $p < .05$). Mother's income level, level of education, race, age, number of children, and child's prematurity status were not held constant to derive zero-order correlation results.

While the relationship between parenting beliefs and parenting stress was significant for the overall sample, it was not significant in the individual zero-order correlation results for the polydrug-addicted mothers ($n=39$), nor for the non-drug-addicted mothers ($n=31$). These results should not be interpreted to mean there were no correlations among three variables in the populations represented by the groups. Rather, as has been discussed above, this study had low power to detect these correlations.

A partial correlation analysis using multiple regression techniques with parenting beliefs as the dependent variable, the six background variables as a covariate set, and parenting stress as an independent variable, suggested that there was a significant partial correlation ($+.25$) between parenting beliefs and parenting

stress for the overall sample of mothers. This partial correlations suggests that, after controlling for race, the correlations between parenting beliefs and parenting stress is positive as opposed to the negative relationship suggested by the zero-order correlation.

Hypothesis 2: It was hypothesized that the degree of parenting stress mothers experienced would be related to their behavior in interaction with their children. Zero-order correlation results for the overall sample ($N=70$) indicated a negative relationship between parenting stress and parent-child interaction ($r=-.47415$, $p < .0001$). While the relationship between parenting stress and parent-child interaction was significant for the overall sample, it was not significant in the individual zero-order correlation results for either the polydrug-addicted mothers ($n=39$), nor for the non-drug-addicted mothers ($n=31$).

A partial correlation analysis using multiple regression techniques with parenting stress as the dependent variable, the six background variables as a covariate set, and parent-child interaction as an independent variable, suggested that there was a significant partial correlation ($-.23$) between parenting stress and parent-child interaction for the overall sample of mothers when holding income constant. This partial correlation was of the same sign as the zero-order correlation, but was smaller in magnitude.

Hypothesis 3: It was hypothesized that mothers' beliefs about parenting would be related to their behavior in interaction with their children. Zero-order correlation results for the overall sample ($N=70$) indicated a positive relationship between parenting beliefs and parent-child interaction ($r=.22553$, $p < .10$).

While the relationship between parenting beliefs and parent-child interaction was significant for the overall sample, it was not significant in the individual zero-order correlation results for the polydrug-addicted mothers ($n=39$), nor for the non-drug-addicted mothers ($n=31$). A partial correlation analysis using multiple regression techniques also suggested no significant relationship between parenting beliefs and parent-child interaction in this sample of 70 mothers ($p > .10$).

This finding related back to a question frequently encountered in the literature and asked in Chapter IV of this dissertation: Is there a relationship between what mothers report as their parenting beliefs and how they actually interact with their children? Few studies were found in the literature that evaluated both parenting beliefs and parenting behaviors as self-report measures (Sigel, 1991). In this dissertation the only measure of parent-child interaction was an observational rating scale. While the results show no relationship between parenting beliefs and behaviors, this question still needs to be

investigated in future research using self-report measures of both variables.

Hypothesis 4: It was hypothesized that the partial correlations among parenting beliefs, parenting stress, and parent-child interaction for polydrug-addicted mothers would be significantly different from the partial correlations for the non-drug-addicted mothers. There were no interrelationships indicated among parenting beliefs, parenting stress, and parent-child interaction in the partial correlation results for the polydrug-addicted mothers ($n=39$). There was one relationship indicated in the partial correlation results for the non-drug-addicted mothers ($n=31$) between parenting beliefs and parenting stress ($r = -.38533$, $p > .05$). The results of the z test for significance between the two r 's indicated that no significant difference. The significance of the relationship was tested a second time setting the nonsignificant r to zero and using the same alpha level. The results of the second z test confirmed that no significant difference existed between the two r values. These null results could be due to low power.

Due to low power, the results of this dissertation cannot be considered consistent or inconsistent with the results of other authors. Because the power is so low, a substantive interpretation of these findings can only be

exceedingly tentative at this time, and contingent upon replication of the results of this study with a much larger sample.

These results do suggest, however tentative agreement with the findings of several authors. Bauman (1980) found that drug-addicted and non-drug addicted mothers in her sample did not differ significantly on measures of parenting attitudes and beliefs.

Jeremy and Bernstein (1984) reported that drug use, when analyzed together with mother's resources, did not predict mother's interactive communicative skills while feeding, diapering, and playing with her infant. The implications of these findings are examined in the following chapter.

CHAPTER VI

DISCUSSION AND CONCLUSION

Overview

The lack of reported research in the addiction literature that examined parenting beliefs, parenting stress, and parent child interaction in the context of parental polydrug-addiction while partialling mothers' race, income, number of years of education, age, number of children and child's prematurity status offered a unique opportunity to extend what has been done. The purpose of this dissertation was to address this gap in the literature. However, the results reported here require replication with larger samples. Future investigation along this line may be extended to address the enhancement of drug-affected parent-child interaction via intervention on mothers' parenting beliefs, levels of parenting stress, and parenting behaviors.

The general parenting literature points to a history of research on, and a continued research interest in, understanding parenting attitudes and beliefs as one route to understanding how and why parents differ from each other in their behaviors. This interest in parenting beliefs and behaviors is an avenue of research that may aid practical

approaches to addressing the needs of polydrug-addicted mothers and their drug-exposed children. With the current proliferation of treatment and rehabilitation programs for drug-addicted mothers and their children, movement toward building models of understanding is important (Bauman, 1980; Bauman and Dougherty, 1983; Lief, 1985; Bushong, 1990; Davidson, 1991).

In this chapter the results of this dissertation are reviewed in the context of theoretical expectations and in terms of the literature reviewed. The limitations of this study are reviewed in terms of power, and the generalizability and validity of the results. Finally, dissertation findings are used to formulate future considerations for research involving polydrug-addicted mothers and their drug-exposed infants and children.

Results and Theoretical Expectations

Hypotheses of Interrelationships

The zero-order correlation matrix for the total sample of mothers supported the hypotheses of interrelationships among parenting beliefs, parenting stress, and parent-child interaction in the overall sample. These results were derived with out taking into consideration mother's race, number of years of education, income level, age, number of children or child's prematurity status. Partial correlation analysis using multiple regression methods was used to address the possibility of spurious relationships in the zero-order correlation results. Multiple regression analysis results suggested relationships between parenting beliefs and parenting stress, and parenting stress and parent-child interaction, but suggested no evidence of a relationship between parent-child interaction and parenting beliefs.

Hypothesis 1

A positive correlation between parenting beliefs and parent-child interaction was observed in the zero-order correlation matrix (+.23) while no relationship was observed between these variables using partial correlations and multiple regression/correlation techniques for the overall sample of 70 mothers. Thus, the zero-order correlation

observed between parenting beliefs and parent-child interaction may be spurious, resulting from a pattern of intercorrelation among demographic variables and parenting beliefs and parent-child interaction. Four of the six demographic variables examined were correlated with parenting beliefs: race ($r=.38$), number of years of education ($r=.22$), income ($r=.22$), and number of children ($r=-.21$). The same four demographic variables were correlated with parent-child interaction: race ($r=.31$), number of years of education ($r=.48$), income ($r=.69$), and number of children ($r=-.33$). Three demographic variables were correlated with parenting stress: number of years of education ($r=-.30$), income ($r=-.48$), and number of children ($r=.33$).

The zero-order correlation results were consistent with theoretical expectations suggesting interrelationships among the three primary variables in this dissertation. Cognitive-behavioral models suggest that stimuli from mothers' environments filter through their cognitive structures and then the filtered information feeds behavioral outcome (Cantor et al., 1982). Consequently, mothers' behaviors during interaction with their children are considered to be shaped in part by conscious and unconscious factors that include beliefs. The observed zero-order correlation results suggest that parenting beliefs may be related to levels of parenting stress,

parenting stress may be related to parent-child interactional propensities, and parent-child interactional propensities may be related to characteristic parenting beliefs.

Hypothesis 2

A negative correlation between parenting beliefs and parenting stress was observed in the zero-order correlation matrix ($-.27$), and a positive relationship was observed between the two variables using multiple regression/correlation techniques ($+.25$) for the overall sample of seventy mothers. The positive partial correlation suggested that as parenting beliefs became more appropriate, mothers' level of parenting stress increased. This finding is contrary to what would be expected based on theory and the reported research. There was no indication in the literature that this change from a negative relationship to a positive one might occur when controlling for race. Dissertation results suggested that the results observed may be explained in one or more ways.

First, the positive partial correlation could have been the result of a Type I error. The probability of making a Type I error in this dissertation was high. A minimum of 16 tests were made at the .10 level. The probability of making at least one Type I error in those 16 tests was about .81.

Second, the positive partial correlation could be

attributed to a combination of the disparate sample size of White mothers in the overall sample ($n=47$, 74.20 percent of the sample) relative to the number of Black mothers ($n=23$, 25.80 percent of the sample), and one or more possible outliers within the smaller group of mothers. This could certainly distort the relationship between the variables (Royeen, 1989). There is also the possibility of deliberate falsification of responses on the parenting beliefs and/or parenting stress measures for any number of reasons (Royeen, 1989). Outliers related to a social desirability response set provide one example of this. This is not to suggest that unequal sample sizes always result in distorted pictures of association. Keppel and Zedeck (1989) for example, suggested that "Most naturally occurring variables are not orthogonal. Forcing such variables into [designs] with equal sample sizes [could] also distort the outcome of the study" (p. 384). It is possible that race, as a naturally occurring nonorthogonal variable, functioned in a manner that had not been previously discussed in the reported research. This possibility introduces the third possible reason for the positive partial correlation.

The third consideration is that Black parents in the U.S. have often had to rear their children in conditions of adversity (Billingsley, 1968; LeMasters and DeFrain 1989). Adverse conditions have included racism, unemployment, and high birthrates for unmarried Black adolescents. In light

of these considerations, it would be reasonable to consider the sign change between zero-order and partial correlations as an artifact of unanticipated variables working within the group of Black mothers. For example, as some Black mothers obtain higher levels of education and employment, measures of their parenting beliefs might likely reflect "appropriateness" and similarity to other groups of mothers (McGillicuddy, 1982). Black mothers, in this instance, would have access to knowledge about the appropriateness or inappropriateness of corporal punishment, appropriate empathy and appropriate parent-child roles and boundaries. However, they would continue to experience other adverse conditions related to being Black and living in a minority culture that would contribute to increases in, or maintenance of, high levels of parenting stress.

Finally, the change in sign from the zero-order to the partial correlation might have been due to an incorrectly specified model. An incorrectly specified model could have resulted in an inaccurate or distorted picture of the relationship. Marital status, level of support, and age of child are hypothesized to contribute significantly to this relationship (Bauman, 1980; Conger et al., 1984; Solomon, 1986; Holden and Edwards, 1989; Mash and Johnston, 1990). These variables were not included in the model.

Hypothesis 3

A negative correlation between parenting stress and parent-child interaction was observed in the zero-correlation matrix ($-.47$), and in the multiple regression/correlation results ($-.23$). These results are consistent, for the most part, with previous research.

Problematic parent-child interactions have been characterized as involving high levels of maternal stress, high levels of control, and of negative interchanges between mothers and child. It is generally understood that parenting stress and deficient parent-child interaction are related (Solomon, 1986; Abidin and Wilfong, 1989; Mash and Johnston, 1989; Chafee et al., 1991).

Hypothesis 4

None of the correlations among parenting beliefs, parenting stress, and parent-child interaction were statistically significant at the .10 level using the zero-order correlations for the group of polydrug-addicted mothers ($n=39$) and the non-drug-addicted mothers ($n=31$). When controlling for all six demographic variables, the partial correlation between parenting beliefs and parenting stress appeared statistically significant ($r=-.38$), while the correlations between parenting beliefs and parent-child interaction, and parenting stress and parent-child interaction were statistically nonsignificant. The partial

r for the correlation between parenting beliefs and parenting stress, however, was not statistically different from zero when controlling only for the statistically significant covariates. None of the tests of differences in partial correlations between polydrug-addicted and non-drug-addicted mothers were significant.

These results suggest that because of extremely low power this dissertation did not provide a good test of the hypothesis of differences in partial correlations between the polydrug-addicted group of mothers and the non-drug-addicted mothers. Future investigations of this hypothesis will require larger sample sizes and, at minimum, inclusion of mothers' race and income level as covariates.

Within and Between Group Differences

Analysis of zero-order correlation matrices for both groups suggested several significant associations among demographic variables in each group. The older the mother in the polydrug-addicted group, the more education she had, and vice versa. The older the mother in this group the more children she had, and vice versa. The mother's level of education, however, was conversely related to the number of children she had. The more children that drug addicted mothers had the fewer the number of years of education they had. These findings certainly make sense in light of the difficulties mothers experience living below the poverty

line, parenting multiple children alone.

Analysis suggested that the older the mother in the non-drug-addicted group the more education she had. The more children the non-addicted mother in the overall sample had, the fewer the number of years of education she had. Results similar to the observed relationships between age, years of education, and number of children are frequently found in the literature that focuses on adolescent mothers and drug use (Bavolek et al, 1979; Christiansen and Goldman, 1983; Fox et al., 1987; Reese and Wilborn, 1983; Amaro, 1989; Bavolek, 1990).

Parenting Beliefs

There were no significant differences between the two groups in the parenting beliefs that sample mothers held. Typically scoring in the high range, mothers in both groups held appropriate expectations of their children and their development, had appropriate empathy for their children, had strong beliefs in alternatives to corporal punishment, and had appropriate mother-child role expectations.

The cognitive-behavioral/social-learning theories imply that parenting beliefs would be similar or different according to how similar or different the mothers' environments were (Waters and Deane, 1982). This would include mothers' cultural and behavioral environments. Thus, mothers from different socioeconomic, age, and

cultural groups would hold beliefs about parenting unique to the environment within which they were reared and in which they currently live. The manifestation of their beliefs would also be influenced by other variables such as their child's temperament (Field, et al., 1980; Brown, 1981; Sluckin and Herbert, 1986), in this case the temperament of the drug-exposed child versus the non-drug-exposed child.

This cognitive behavioral/social learning view would also suggest that mothers define parenting, attach meaning to the role, and hold beliefs and expectations of themselves and of their children that have been acquired at least in part through the observation of behaviors modeled by their parents. Thus demographic and background variables would contribute to differences in parenting beliefs. Mothers' addiction status would contribute to the parenting beliefs she held in terms of the models she had around her and whether or not they used drugs while parenting and presented it as acceptable behavior. A further consideration would be whether or not she was reared by a drug-addicted mother and/or drug-addicted parents.

The parenting literature suggests that some beliefs are related to interactions that are very basic to parenting and may cut across demographic differences, thus, when parenting beliefs are measured there is a possibility of finding similarities across disparate groups simply due to a general social conceptualization of "appropriate" parenting beliefs.

Examples could readily be found in folk beliefs about parenthood in American society. "Rearing children is fun." "Children are sweet and cute." "Children fulfill women's needs." There may be general beliefs about parenting held by women that have a basis in society's definition of parenting. This would suggest that when measuring parenting beliefs using paper-and-pencil measures the general social construct of parenting that each mother has access to may be what is tapped (Cantor et al., 1982).

This perspective is consistent with the fact that there are certain universal parenting tasks that most mothers of infants are involved in, regardless of group of membership (Schuster and Ashburn, 1980; LeMasters and DeFrain, 1989). From this perspective the finding of similar beliefs would be consistent with tenets of cognitive behaviorism. For example, central developmental issues for the infant are sleeping, eating, eliminating, and gaining increased ability to organize behavior (Sroufe, 1979). A mother may or may not, however, permit her infant to sleep a great deal, help the child to take food satisfactorily, to eliminate, or to gain increasing abilities for coordination of body, including arms, legs, and head. There are gray areas when considering this view, however. Because of her own childhood experiences, or her observation of models, a mother might believe that infants have a higher degree of control over food intake, elimination, and their body than

is possible. In this case differences in beliefs about child development should show up upon questioning.

In Chapter IV it was mentioned that several authors have found no difference between drug addicted mothers and non-drug-addicted mothers on their parenting attitudes and beliefs (Bauman and Dougherty, 1983; Lief, 1976). Bauman (1980), for example, found no difference between drug-addicted and non-drug-addicted mothers on parenting attitudes and beliefs and her drug-addicted mothers were observed to demonstrate more adverse parenting behaviors in interaction with their children.

Parenting Stress

The mean stress score for the polydrug-addicted mothers was significantly higher than for the non-drug addicted mothers. These results were not surprising in light of the fact that the polydrug-addict mothers in this sample were less well educated, poorer, and likely to be single parents with more than one child. These mothers were also coping with withdrawal, the rigors of parenting drug-exposed children who may have been evidencing difficulties from drug exposure, and they were facing involvement in a rehabilitation program with new demands and expectations. The higher mean stress score for the polydrug-addicted mothers did not, however, suggest critical levels of stress. Their mean stress score was not higher than Abidin's (1990)

clinical cut score used in service delivery settings as an indicator of need for further assessment and strategies to reduce the parents' level of stress.

The literature suggests a frequent assumption that non-drug addicted mothers would not experience stress like that of polydrug-addicted mothers including stress related to giving birth to a drug-exposed child, and having once had drugs in their system but that no longer being the case, as both mother and child were involved in a rehabilitation program. Measures of other life problems that may be related to high levels of parenting stress were not controlled for in this dissertation. For example, measures were not gathered for the effects of psychiatric/mental health problems like depression on between group differences. Controlling for psychiatric problems in a comparison group when assessing drug-affected mother-child functioning might produce smaller adjusted mean differences in stress scores. The lack of knowledge about other stress generating problems in drug addicted and comparison groups is an important gap requiring attention in future research.

Parent-Child Interaction

Social-learning theories imply that patterns of parent-child interaction would be similar or different according to how similar or different the environment in which mothers and their children lived. It is generally understood that

parents from different cultures and socioeconomic levels practice different parenting strategies (LeMasters and DeFrain, 1989). These differences are generally (but not necessarily) functional and they are adaptations to the culture and society in which mothers and their children live (LeMasters and DeFrain, 1989). Consistent with this theory, results on the PCIF suggested that the polydrug-addicted mothers in this sample had greater deficits in parent-child interaction than the non-drug-addicted mothers.

These results are also consistent with results found by Lief (1979, 1985) using the same instrument. Polydrug-addicted mothers were observed to show less attention to the physical care of their children, less consistency in daily feeding, sleeping, and play routines, and impatience in teaching and allowing their infants and children freedom of exploration. This is not surprising in light of the drug-affected life style in which mother and child had been living prior to entering the Great Starts program. Characterized by high levels of instability and conflict, the lifestyle of the drug-addicted, impoverished, single mother, would make it difficult to establish consistent and daily care routines.

Using the PCIF in a sample of drug-addicted and non-drug-addicted mothers at intake and during the length of parent education program involvement, Lief (1979, 1985, 1991) found that drug addicted mothers evidenced

deficiencies in parent-child interaction when compared to the non-drug addicted mothers. Addicted mothers demonstrated deficiencies in the provision of physical care, patterning, language, enjoyment of their children, maternal self-concept, and basic trust. Results of this dissertation suggest a difference in the parent-child interactional abilities of the polydrug-addicted mothers relative to the non-drug-addicted group.

Length of time of involvement with the rater involved in observing and rating mother-child interaction may have been different for mothers in both groups. This may have resulted in the detection of differences that may not have otherwise been reported. This suggests that length of program involvement may function to distort the picture of observed results. The Great Starts mothers were observed during their initial intake period, while comparison mothers may have been involved with the center and teacher for a significant period of time. The length of time of daycare involvement for the comparison mothers was not considered as a possible confounding variable during the initial formulation of the problem and should be considered in future research efforts.

If interpreted using a cognitive-behavioral framework, the PCIF results for the polydrug-addicted mothers suggests that her environment and her involvement with her drug-exposed child may have contributed significantly to her

actions. It is possible that the strength of the effects of polydrug-addiction in the mothers and prenatal-polydrug-exposure in their children contributes to their interaction to such an extent that the effects of beliefs on behavior/interaction are overwhelmed.

This finding suggests that although these mothers held appropriate parenting beliefs, parent-child interaction observed and labeled as "deficient", was contextually congruent with the active drug-using lifestyle and quality of interaction in drug-affected mother-child dyad. The cognitive-behavioral model would suggest that the observed mean parent-child interaction score for the polydrug-addicted mothers would be lower than the non-drug addicted mothers due to the drug-using environment and it's accompanying isolation and other difficulties. The non-drug-addicted mothers in this sample would be presumed to have fewer deficiencies in parent-child interaction because of their access to non-drug addicted, better educated, and more financially and socially secure role models. Lief (1979) found that drug-addicted mothers had low parent-child interaction (PCIF) scores at intake, but these scores improved over time with continued involvement in the parenting education program.

The cognitive behavioral model would further suggest that the polydrug-addicted mother's involvement in the drug free and supportive environment of the rehab program would

result in behavior change. Within the program environment these mothers would observe and come in contact with others who view particular parenting behaviors and parent-child interaction as favorable and may result in both new and inhibited behaviors. This is consistent with Bandura's (1969) perspective that behavior change can result from the observation of a model's behavior. Following Bandura's suggestions, the polydrug-addicted mother as observer of some model's behavior in a rehabilitation program may acquire new parenting and parent responses. Certain of the observer's behaviors may be inhibited or enhanced as a result of the observation, or previously learned responses may be facilitated (Bandura, 1969).

What remains unclear in the addiction literature, however, is an indication of antecedents to the incidence of deficits in satisfactory mother-child interaction. Child characteristics such as the inability of the drug-exposed child to reinforce positive parental behavior, low or exaggerated responsiveness, low birth weight and preterm birth status have been suggested in the literature as antecedents to troubled parent-child interaction. These characteristics were not measured in this dissertation and need further investigation in future research.

Addiction Status as Moderator of Interrelationships

The results of this study suggested that polydrug addiction was not a significant differentiating factor in the interrelationships among parenting beliefs, parenting stress, and parent-child interaction. These results are contrary to expectations found in the literature. These results should not be interpreted to mean that there were no differences in the correlations among these variables in the two populations represented by the groups in this dissertation. Rather, as has been discussed earlier, this study had low power to detect differences in these correlations between groups.

It is generally accepted that maternal addiction adversely affects parenting and the parent-child relationship (Carr, 1975; Bauman and Levine, 1986; Ahart et al., 1991; Chasnoff, 1991, 1990; Feig, 1991; Barth et al., 1993). There is evidence that addictive drug use interferes with the performance of parenting responsibilities, maternal self-care, and recognition of child's cues and needs (Burns, 1986; Burns et al., 1988; Besharov, 1990; Bresnahan et al., 1991). Drug addiction is also often related to economic costs including strain on family budgets that frequently fall below poverty level as in the sample of polydrug-addicted mothers in this dissertation. Clearly, future research on this hypothesis must include larger sample sizes than were used in this dissertation.

Limitations

Reliance on a convenience sample from the Great Starts program evaluation and the limited number of cases in the rehabilitation program and the day care center response, opened the door to numerous problems, including a lack of power and potential biasing effects. Major concerns of this study included: power, external validity, and potential biases in observers scoring of the PCIF. Differences in data collection sites, use of single observers, and the lack of randomization, also suggested that the research design chosen for this dissertation was open to several threats to internal validity including selection, history, maturation, testing, instrumentation, and regression. Other threats to validity in this study include the stylistic response set and the social desirability response set. Applied research, characteristically, opens itself up to these concerns.

Power

The dissertation sample size was not large enough to detect differences in the correlations among parenting beliefs, parenting stress, and parent-child interaction between the two groups. Power was the key issue in testing the hypothesis that there would be differences in the intercorrelations among the three variables of interest between the two groups when controlling for mother's income, race, level of education, age, number of children, and child's prematurity status.

Selection

Interest in the interrelationships among parenting beliefs, parenting stress, and parent-child interaction was researched in this dissertation with a segment of a population receiving rehabilitation services. Drug addicted mothers enrolled in Great Starts were program participants due to court, medical, DHS, or other social service agency intervention in their lives. The threat of losing custody of one or more of their children loomed large for many of these women. Further, the non-drug-addicted comparisons were not a matched comparison group in the strictest sense of the term.

There were no statistically significant differences between the groups in racial make up, age, and prematurity status of the target children. The groups differed

significantly in terms of marital status, income, number of years of education, and number of children. Systematic differences in the composition of the groups characterizes the threat of selection to internal validity. Due to the lack of randomization factors other than addiction status may have influenced differences detected between the two groups in this study.

Reasons for the 50 to 66.7 percent refusal rate for non-drug-addicted mothers presented with the opportunity to participate in this dissertation are unknown. Length of the questionnaire packet was a primary concern and is a possible variable affecting the survey return rate. Length of the packet may have been a deterrent to completion, particularly when the mother had to care for an infant and/or child(ren). In other words, mothers without time or energy to use in nonimmediate parenting endeavors were self-selected out of this dissertation. These mothers would provide interesting comparisons as their levels of stress, and the degree of support in their lives, for example, may have been more in line with the levels of stress the polydrug addicted mothers coped with.

Another threat to validity involves consideration that there is a segment of the population of drug addicted pregnant and/or parenting women who will not become involved in the rehabilitation intervention offered by programs such as Great Starts (Escamilla-Mondanaro, 1977; Feig, 1991).

This subgroup of addicted pregnant and/or parenting women may be financially insulated from detection, in denial regarding the impact of their addiction on themselves and/or their children, they may be erroneously diagnosed by their physicians, they may be incarcerated, homeless, or they are hiding for fear of prosecution and/or are otherwise living on the fringes of our society. There is the possibility that some women, more than others, chose to or feel they have no choice because of the risk of losing custody of their drug-exposed children and/or jail.

It may well be that the drug-addicted woman who was admitted to Great Starts was the most chronic, or the least chronic enough to be detected by hospital, court, and DHS authorities. She may have been destined to have a particular parenting outcome, with or without Great Starts participation. This suggests that Great Starts admission criteria and the way each mother ended up in the program may have posed a threat to internal validity.

The process of referral to Great Starts by the Department of Human Services, local hospitals, employers, etc. may be biased, posing another threat to internal validity. A particular DHS worker, for example, may be making a significant number of referrals to the program, but she/he may be referring only women who are AFDC recipients and present overtly as having exposed an unborn child to drugs, ignoring reports of the same on middle and upper

class mothers.

Differential Maturation

Because addiction is variously manifested in individuals, the rate of appearance of adverse affects during active drug use or change during involvement in rehabilitation programs also varies across individuals. Of interest in this study, however was the different maturational levels of the mothers at intake. Campbell and Stanley (1966) discussed differential maturation of individuals and of groups as a threat to internal validity. Measurement of the parenting beliefs, parenting stress, and parenting behaviors of drug-addicted women whose lives had very recently been stabilized via acceptance into a residential treatment program for woman and children, such as Great Starts, may have different maturational ramifications than the measurement of the same variables with drug-addicted women who had not recently experienced a stabilizing intervention in their lives. It is proposed that the results would be different for comparisons of polydrug-addicted mothers who continued without intervention and polydrug-addicted mothers who were measured at intake. It might be tentatively extrapolated from the results here that higher levels of stress would be related to continued drug use and the accompanying problems (such as figuring out how to keep a roof over their children's heads, feeding,

clothing, and caring for their children in the midst of dealing with their ongoing addiction). Comparisons between polydrug-addicted mothers receiving intervention, polydrug-addicted mothers not receiving intervention, mothers of infants and mothers of toddlers, and non-drug-addicted mothers who are new to the day care or comparison environment are suggested in future research. This is one way to limit bias introduced via differential maturation.

Consideration of the maturation of the child as well as the mother are important. As mentioned earlier in this chapter, knowledge of the length of time the non-drug-addicted mother had to interact with daycare staff and to learn their routines and expectations (and vice versa) may have contributed to the masking of differences between the groups. Age of the target child was not addressed in this dissertation but could also contribute to differences in types of beliefs and levels of stress reported by mothers, and differences in observed mother-child interaction. The mother of a three month old, who is totally dependent on the mother, would experience stresses of parenting very different from the mother of a three year old who is venturing out and exploring his/her world and limitations.

Comparisons of parenting beliefs, levels of parenting stress and parent-child interaction within groups controlling for age of child may reveal interesting patterns of relationships in the overall sample and for polydrug-

addicted and non-addicted groups.

Social Desirability Response Set

Efforts were made to control for the social desirability response set via the use of thorough directions regarding the purpose of the instrument (i.e. for Great Starts, they're used as assessment tools for treatment and program planning; home for a real situation). The polydrug-addicted mothers may have been invested in answering questionnaire items correctly or performing well on the instruments so as not to appear as impaired in areas of parenting as their referral source intimated.

Can we be sure that a mother's "strongly agree" response matched her view of herself or the actual experience of an item's particular situation (Segal and Shaw, 1988)? In other words, did the mother "strongly agree" with item number 7 on the AAPI: "A good child will comfort both of his/her parents after the parents have argued" (Bavolek, 1984), because it corresponded to the belief she held regarding that aspect of parenting at the time, or because she believed it was a desirable response that was expected of her or that would make her look good. The fact that they were in a rehabilitative program resultant of prenataally exposing one or more of their children to drugs may have impacted the way they responded (Huck et al., 1974).

Social desirability response set was also a concern for the non-drug-addicted mothers who were aware that they were contributing to the study of drug-addicted mother-child functioning. The importance of having a non-addicted comparison group was reiterated in the cover letter received by each prospective comparison group mother and by the day care director. With each chiding the possibility was increased for self-reported non-addicted mothers to respond "well" to counter what they may have perceived as the "poor" parenting beliefs and parent-child interaction, and high parenting stress experienced by the drug-addicted mother. In other words, the non-drug-addicted mothers may have wanted to look good in reference to polydrug-addicted mothers.

The order of the sequence of AAPI, PSI, questions and the type of questions used may have tended to result in respondents or observers endorsing the right or left hand responses more often (Huck, 1974). Mothers in either group may not have endorsed questions that cast the child into a negative light, when they actually believed it. These mothers may have been working to make a good impression on the Great Starts or daycare staff.

Mortality

The program evaluation data base used in this dissertation included polydrug-addicted mothers who participated in Great Starts from August 1991 through May 1993. From the program evaluation records it was evident that a number of mothers had dropped out of the program prior to completing the intake process. The reasons for subjects dropping out ranged from the desire to continue the drug-using life style, family intervention into the process (many families prefer the status quo (Mondanaro, 1977)), serving jail time, and reasons unknown. The mothers who dropped out of the Great Starts program may have differed in important ways from the mothers who remained.

Tapping Parenting Beliefs

It is conceivable that the ability to tap into internal beliefs about parenting that mirror actual parenting behavior, may not be as simple as use of paper-and-pencil inventories to measure beliefs and rating scales to measure behavior. This probability was mentioned briefly in Chapter II. Hollin and Bemis (1981), for example, differentiated between cognitive structures and processes within and outside of the individual's awareness as surface (more accessible) and deep (not as easily accessible) structure. Information processing approaches, such as the coping and stress model proposed by Lazarus (1966, 1984) and the

problem solving approach proposed by D'Zurilla and Goldfried (1971), suggest that individuals respond to situations with active and rational appraisal of their environment. These models refer to overt cognitive processes. Bell (1979) also suggested that individuals consciously classify information in their selection of an appropriate response from a repertoire of possible responses.

We may be able to use what mothers chose on questionnaires as being representative of their "surface" beliefs (to use Hollin and Bemis' term) about parenting. However, what is responded to on paper may not reflect what really goes on in their cognitive systems and may not be tapping their "deep" beliefs.

If we are indeed merely tapping surface beliefs in our use of paper-and-pencil measures, it is possible that specific links between expressed beliefs and behaviors may not be evident except in situations involving large sample sizes or in instances of extremes of beliefs and behaviors, such as in child abuse or in instances where the cognitive domain and the behavioral domain clearly overlap. Perhaps in such instances deep beliefs are closer to the subject than usual.

In Chapter II, mention was made of growing recognition of the role of emotions in connection with beliefs and the formulation of behavior in cognitive behaviorism (Greenberg and Safran, 1984). Greenberg and Safran (1984) delineated

between hot cognitions (cognitions with accompanying emotion) and cold cognition (cognitions without accompanying emotion). Proponents of the presence of an affective component of cognitions have also suggested that attempts to change beliefs that are not accompanied by related affect were more difficult than those accompanied by affect (Greenberg and Safran, 1984).

The proposition of emotion laden cognitions, or a moderating role of emotion in the relationship between beliefs and behavior suggests an avenue of investigation not taken in this dissertation. The AAPI, which asks for responses to questions such as: "Parents should slap their child when s/he has done something wrong," or "Children should always be spanked when they misbehave," invite examination of the emotions that accompany these beliefs. The design of such an investigation would certainly present a challenge to the interested researcher.

Background Factors

Marital status or other indicators of social support have been found to moderate maternal stress. Social support is variously defined to include environmental and parental stress in the forms of immediate and extended network of family and friends to help with errands, sharing intimate feelings, and other parenting responsibilities (Conger et al., 1984; Solomon, 1986). The fact that in this

dissertation sample 83.87 percent of the non-drug-addicted mothers were married compared to 10.26 percent of the polydrug addicted mothers, may have been indicative of varying levels of support that mothers in both groups had and how much stress was attenuated as a result. Since marital status was not included as a covariate controlled for through partialling, the possibility of its impact on the interrelationships among parenting beliefs, parenting stress, and parent- child interaction is unclear and needs to be addressed in future research.

Instrumentation

There was an array of behaviors subsumed within each behavioral category of the PCIF. It may have been that beliefs as assessed by the AAPI were expressed more by other types of mother-child interaction than those found in the PCIF. The consistent and uniform interpretation of observed mother-child interaction in terms of these broad categories across observers remained a concern throughout data collection. Although information regarding category interpretation was provided, there remained room for changes in the measuring instrument as any one observer became more skilled, or more confused, with its use. There is no way to gain a feel for the intricacies of parent-child interaction using the PCIF. The global categories tended to wash out possibilities to examine exactly what caused limited

evidence of certain maternal input behavior on the mother's part.

Further, the PCIF was designed to record observed behavior right after sessions in a parent education program. For this dissertation the design was extended to recording at the end of an observation period that extended from 5 to 14 days. This extended observation period permitted the Great Starts observer and the comparison daycare observers the opportunity to observe mother-child interaction in natural feeding, diapering, and toilet training situations all of which typically did not occur in the same observation period. This extended observation period may have introduced error to the results. Bias could have led to inaccurate ratings because of faulty memory, attitudes towards clients who stayed versus clients who dropped out, clients who were compliant versus clients who were noncompliant, and so on.

The assumption that the AAPI or the PSI actually measure the cognitive processes of interest is a question that should be posed in light of the results of this dissertation. This is not a question of construct validity, which has been established by the developers of each of the instruments, but rather a question regarding the assumption that we can actually use paper and pencil inventories to tap into and accurately represent cognitive structures. It is not clear what the actual interpretation and meaning an

endorsement of individual inventory items was for each mother. Was she reporting the impact or importance of the thought or beliefs presented on the form via her "strongly agree" response, for example? Or did her "strongly agree" response represent something else?

We cannot be clear about the impact of the Great Start program, even at the intake/assessment phase, on participant's cognitive processes. Although precautions were taken to have the AAPI and the PSI administered during the intake period, some environmental "contamination" had to occur by virtue of the design of the program. Mothers new to the program interacted with staff during intake, and interacted informally with other program participants during free time during the day and evening hours. An examination of these questions were beyond the scope of this dissertation, but bear future research consideration.

Efforts were made to control for threats to the statistical conclusion validity of the dissertation results (Cohen and Cohen, 1983). The validity and reliability histories of the AAPI, the PSI, and the PCIF were discussed in Chapter IV, and the reliability coefficients obtained for the data from this study were high.

A significant source of invalidity would be the degree of reliability of the observers. The dissertation design included ratings by women who were the children's daycare teachers. It is possible that women rating women introduces

bias in and of itself. It is also possible that the stigma attached to being an addicted woman, coupled with the stigma of exposing an unborn child to drugs, may have introduced bias in the ratings of the interaction between polydrug-addicted mother and her drug-exposed child. Reliability coefficients suggested that the PCIF was a reliable measure. However, only one observer per mother-child dyad was used to observe and rate each mother-child pair. A further design limitation and concern was that often a different rater was used for each mother child dyad. When the teacher was responsible for more than one child, ratings were conducted by the same teacher. In the Great Starts Daycare, the Child Development Laboratories, and PeeWee's Playhouse the same teacher rated each mother-child pair on the PCIF. Unfortunately, interrater agreement was not assessed in this study.

As mentioned in Chapter IV, the resources were not available to use more than one observer for each mother-child dyad in Great Starts or in this dissertation. Replication of the single observer approach would be the primary means of checking for systematic fluctuations in the ratings of single judges (Huck, 1974).

External Validity

Comparison of available AIA population and dissertation sample demographic information from 1991 through May 1993 suggested significant differences between the two groups for the proportion of Black, Hispanic, Native American, Other or Unknown race, income, and reported maternal prenatal drug use. The two groups were similar on the substances used, birth weight, and birth status reported for target children. The ability to generalize dissertation results was unknown because the two groups were dissimilar on all but one of the demographic variables of interest to this dissertation. It is suggested that the dissertation sample reflected at least in part the unique social and ethnic make up of the East Tennessee Appalachian area while the AIA sample reflected a sample drawn from AIA programs in large urban areas across the U.S. Hence, generalization of the results of this dissertation is limited at best.

Implications for Future Research

The results of this dissertation have a number of implications for further investigation of the interrelationships among parenting beliefs, parenting stress, and parent-child interaction, and instrumentation. First, it is clear that the primary way to increase external validity would be by replication (Huck, 1974; Fagley, 1985). Second, it is clear that the primary way to address the problem of low power is to increase the sample size of the two groups.

Of the six covariates controlled for in this dissertation, mothers' income, number of years of education, and number of children were the only ones determined significant after statistical analysis. It is suggested that mother's race, age, and child's prematurity status remain in future models until replication suggests that there is enough power behind the decision to exclude them. It is stressed here, that the results of tests of differences between partial correlations between groups in this dissertation should not be interpreted to mean there is no correlation between parenting beliefs, parenting stress, and parent-child interaction in the populations represented by the two groups. Rather, this study had low power to detect these correlations. The primary concern here is low power to detect differences in the correlations between the

two groups.

Several authors have suggested that the use of more than one drug may present a confounding of results. In this dissertation, for example, the use of more than one drug may have resulted in correlations that were spurious because of a pattern of intercorrelations among the different drugs used, demographic variables and parenting beliefs, parenting stress, and parent-child interaction. This points to the utilization of covariate sets that include the different drugs used in samples of polydrug addicted mothers. Analysis of covariance and partial correlation using regression analysis would make such an analysis possible. The effects of cocaine/crack, marijuana, alcohol and other drugs used could be taken into account. . .

Murphy (1980) reported a clinical cut score of 91 for the AAPI. Respondent scores falling below 91, he suggested, would be indicative of abusive parenting attitudes, above 91 would be indicative of appropriate parenting attitudes. Similarly, Abidin (1990) reported a clinical cut score of 90. Respondent scores rising above 90 would be indicative of clinically significant levels of stress, and scores below 90 would represent clinically nonsignificant levels of stress. The use of cut scores suggest another possible analysis not addressed in this dissertation: use of a clinical group variable for comparisons (i.e. mothers with clinical levels of stress and mothers with non-clinical

levels of stress). Mothers' clinical status could be used as an independent variable in a regression analysis with parenting stress, for example, as the dependent variable. The partial correlation analysis for stress and clinical status, after weeding out the covariates that were insignificant, would provide important information about the differences between mothers in the clinical and non-clinical groups. The same type of analysis could be conducted using parenting beliefs as the dependent variable.

The use of two or more observers, who are blind to the purpose of the research, in future research endeavors in this area is indicated in the literature as well as based on the results here. Rater gender bias is also suggested as an interesting avenue for future investigation. Use of comparisons with matching amounts of time in contact with their daycare center teachers and staff would also be indicated as one way to increase validity. This variable may introduce bias on the part of the observer as well as response bias on the part of the mother.

This study focuses on mothers and children. Fathers are not included. This bias was introduced due to the nature of the drug addiction rehabilitation setting from which data was gathered. This bias is not intended to reflect a disregard of the parenting beliefs, parenting stress, and parent-child interaction of fathers. It is obvious that future research along these lines should

include fathers (Feig, 1991). Efforts to understand differences and similarities between mothers and fathers on these variables take on considerable research, treatment, and prevention significance.

Focus on the relationship between parenting beliefs and parent-child interaction in the context of addiction suggests future research geared towards evaluating how polydrug-addicted mothers adjust their belief systems and behavior in accordance with feedback from their drug exposed children who demonstrate feeding, elimination, sleeping, hyperactivity, and other problem behaviors. This avenue of future research is suggested by the cognitive-behavioral literature. The often difficult child characteristics of drug-exposed children may influence how drug addicted mothers organize both their cognition/beliefs and their behavior in response to this difficult behavior. Further work that examines these factors and that clarifies these variable relationships is suggested.

The theoretical argument that mother and child are involved in reciprocal processes of consciously and unconsciously sending and receiving information and cues and responding was discussed in Chapter II. The importance of reciprocal influences was emphasized in Chapter II yet only two child related measures were included in this study. First, the child's prematurity status was considered a covariate that would significantly contribute to differences

in parenting beliefs, parenting stress, and parent-child interaction between the groups. The inclusion of this variable as a covariate was based on the literature suggesting that prenatal drug exposure increases the risk of premature births (Carr, 1975; Lief, 1976; Reed et al., 1982; Ahart et al., 1991; Chasnoff, 1992), and that pre-term infants have different interactions with their mothers than full-term infants (Bakeman and Brown, 1980; Moses and Buckner, 1985). Secondly, mothers' perception of their child's temperament as difficult or not was measured on the Difficult Child subscale of the PSI. In this dissertation, however, total scores were the focus of statistical analyses and discussion. This limitation suggests future investigation of differential results on the Difficult Child subscale and correlations of results with mother-child interaction scores.

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APPENDIX

RESEARCH PARTICIPATION CONSENT FORM

Darlene Grant, M.S.S.A., in fulfillment of doctoral degree requirements, is conducting a study on parenting beliefs, behaviors, and parental satisfaction in addicted and non-addicted women and related parent-child interaction. In light of the contribution such a study can make to the parenting literature and treatment program development, we have consented to ask Daycare Center non-addicted mothers to complete several self-administered forms.

As a center with healthy child development and parent-child interaction in mind, we are very supportive of U.T. and other students who endeavor to enlighten themselves and others in this area. If you participate you will be helping in a study of importance.

Of course, participation is voluntary; you may refuse or withdraw from the study at any time. During the time you spend filling out the related forms, you may omit any questions that you do not wish to answer. Your opinions are very important to Ms. Grant, and she will hold your answers in the strictest of confidence.

We would appreciate it if you would complete the questionnaires and return them to your Daycare director in the sealed envelope provided within the next two weeks.

Your participation is very important to this research. You will be helping Ms. Grant provide the best information available for the provision of services to families in need of addiction intervention.

I HAVE READ AND I UNDERSTAND THE ABOVE INFORMATION AND I AGREE TO PARTICIPATE.

Name _____ Signature _____ Date _____
(Please print name)

Comparison Group Demographic Data

Client ID# _____

Today's Date _____
MM/DD/YY

INFORMATION ABOUT YOU

1. Date of Birth _____
mm/dd/yy

2. ___ Race

1. Black 2. White
3. Asian 4. Bi-racial, (specify) _____
5. Other, (specify) _____

3. ___ Gender

- 1=Female
2=Male

4. ___ Marital Status

1. Single, never married 2. Married
3. Divorced/Separated 4. Widowed
5. Other, (specify) _____

5. ___ Years of Education

01. Grade 8 or less 02. Some High School
03. High School Grad 04. Some College
05. College Grad 06. College past BA or BS
07. GED 08. Other, (specify) _____

5a. ___ Actual number of years of education

6. ___ Receiving SSI?

- 1=No 2=Yes

7. ___ Receiving Medicaid?

- 1=No 2=Yes

8. ___ Do you have a handicap or medical condition?

- 1=No 2=Yes

if Yes, Please Specify _____

9.____Does your child(ren) have a handicap or medical condition?

1=No 2=Yes

if Yes, Please Specify which child and what condition_____

10.____Yearly gross. Family income form all sources (WIC, Food Stamps, AFDC, etc.)

- | | |
|--------------------------------------|------------------------|
| 1. Less than \$5,000 | 4. \$10,001 - \$12,500 |
| 2. \$5,001 - \$7,5000 | 5. \$12,501 - \$15,000 |
| 3. \$7,501 - \$10,000 | 6. \$15,001 - \$18,500 |
| 7. \$18,501 - Higher, (specify)_____ | |

11.____Number of children you have given birth to.

PARENTAL INTERACTION FORM

Client ID# _____

Today's Date _____

Worker ID# _____

Rating Key:

- 5 = Highly Evident
- 4 = Good Evidence
- 3 = Some Evidence
- 2 = Very Little Evidence
- 1 = No Evidence

STAFF RATING

PARENTAL INPUTS

EXPERIENCES PROVIDED

- | | | | | | |
|--|---|---|---|---|---|
| 1. <u>PHYSICAL CARE OF CHILD</u> | 5 | 4 | 3 | 2 | 1 |
| Diet, hygiene, health care, safety. | | | | | |
| 2. <u>PATTERNING & SEQUENCING</u> | 5 | 4 | 3 | 2 | 1 |
| Has regular sleep, feeding, bath, play routines; bedtime rituals; organized but not rigid. | | | | | |
| 3. <u>INPUT OF MOTOR & SENSORY STIMUL'N</u> | 5 | 4 | 3 | 2 | 1 |
| Face to face interaction, games, supply of age approp. materials. | | | | | |
| 4. <u>INPUT OF LANGUAGE & COMMUNICATION</u> | 5 | 4 | 3 | 2 | 1 |
| Patient teaching of speech & sounds; talks, labels, tutors, elicits verbal expression of feelings, experience. | | | | | |
| 5. <u>PERMITS EXPLORATION</u> | 5 | 4 | 3 | 2 | 1 |
| Fosters learning by doing; allows spatial & contact freedom. Available for assistance but does not interrupt needlessly. | | | | | |
| 6. <u>GUIDES SOCIAL RELAT'NS W/OTHERS</u> | 5 | 4 | 3 | 2 | 1 |
| Arranges, supervises play with peers; teaches sharing, competent use of adult as resource, etc. | | | | | |

ATTITUDES

7. INTEREST IN ACHIEVEMENT & MASTERY 5 4 3 2 1

Values child's continuous progress;
actively encourages to fill
potential.

8. ENJOYMENT OF CHILD AS PERSON 5 4 3 2 1

Child-centered rather than
extension of self; gets pleasure
from child's growing as person.

9. MATERNAL SELF-CONCEPT & ROLE 5 4 3 2 1

Self-confident as mother; accepts
child's ages/stages; sees role as
nurturing growth.

DEVELOPMENTAL ISSUES

10. ESTABLISHES TRUST & PERSON RELAT'NS 5 4 3 2 1

One person caretaker; gives
security, love; responsive to child's
cues; fills soothing needs.

11. DEALS WITH SEPARAT'N/INDIVIDUATION 5 4 3 2 1

Allows natural development of autonomy;
moves w/child's own readiness;
doesn't push separation.

12. ESTABLISHES CONSCIENCE MECHANISMS 5 4 3 2 1

Focus on recognizing approved
behavior; punishment w/limits
geared to child's comprehension;
not harsh.

Original Maternal Input Scale, by New York Medical College,
Dept. of Psychiatry, and Nina Lief, MD. (1985)

Great Starts Pregnancy History

1. Client ID# _____ Worker ID# _____
2. Client first name _____ Date of Intake ____/____/____
MM DD YY
3. Client birth date ____/____/____ Date form completed ____/____/____
MM DD YY

**Place the number which corresponds to the most appropriate answer
in the blanks provided.**

Regarding your current pregnancy/most recent (Circle which applies):

4. _____ How far along were you when you yourself first knew you were pregnant?
Weeks _____
5. _____ What made you think you were pregnant?
- | | |
|----------------------------|--------------------------|
| 00. Didn't know | 04. Felt/sick pregnant |
| 01. Missed periods | 05. Breasts sore |
| 02. Showing | 07. Other, specify _____ |
| 03. Told I looked pregnant | |
6. _____ Did you have a pregnancy test to confirm your pregnancy?
- | | |
|-------|--------|
| 1. No | 2. Yes |
|-------|--------|
7. _____ If yes, where was the pregnancy confirmed?
- | | |
|------------------------|-------------------------|
| 0. Never confirmed | 3. Clinic |
| 1. Health Department | 4. Private MD _____ |
| 2. Home pregnancy test | 5. Other, specify _____ |
8. _____ How far along were you when the pregnancy was confirmed?
Weeks _____
9. _____ What were your feelings when you found out you were pregnant?
- | | |
|----------------|-------------------------|
| 0. No feelings | 4. Unsure |
| 1. Happy | 5. Adoption planned |
| 2. Accepting | 6. Other, specify _____ |
| 3. Upset | |
10. _____ Did you ever consider terminating the pregnancy?
- | | |
|-------|--------|
| 1. No | 2. Yes |
|-------|--------|

Great Starts Pregnancy History

11. ____ If you thought about terminating the pregnancy, why did you not follow through with this?
Check the primary reason.

- | | |
|----------------------------------|-------------------------------------|
| 00. Not applicable | 04. Against beliefs |
| 01. Too far along | 05. Opposition from father of child |
| 02. No money | 06. Opposition from family |
| 03. Could not get an appointment | 07. Other, specify _____ |

12. ____ Were you using contraception when you became pregnant?

- | | |
|-------|--------|
| 1. No | 2. Yes |
|-------|--------|

13. ____ *If you weren't using any contraception, why not?*

- | | |
|-------------------------------|--|
| 01. Planned pregnancy | 06. Have not used any since last pregnancy |
| 02. Have never used any | 07. Couldn't afford any |
| 03. Didn't like birth control | 08. Didn't know where to get any |
| 04. Made me sick | 09. Didn't think could get pregnant |
| 05. Ran out | 10. Other, specify _____ |

14. ____ *If you were using birth control/contraception, what type?*

- | | |
|----------------------|--------------------------|
| 00. Not applicable | 06. IUD |
| 01. Pill | 07. Sponge |
| 02. Condoms | 08. Rhythm |
| 03. Foam | 09. Tubal Ligation |
| 04. Foam and condoms | 10. Withdrawal |
| 05. Diaphragm | 11. Other, specify _____ |

15. ____ Were you able to receive any prenatal care?

- | | |
|-------|--------|
| 1. No | 2. Yes |
|-------|--------|

16. ____ *If you did not receive any care, why not?*

- | | |
|--------------------------------------|---|
| 00. Not applicable | 07. Inhospitable institutional practices |
| 01. Lack of childcare | 08. Dislike/fear of prenatal services |
| 02. Lack of transportation | 09. Financial problems |
| 03. Unaware of pregnancy | 10. Didn't want to be pregnant |
| 04. Not necessary | 11. Delivered baby before scheduled appointment |
| 05. No reason | 12. No time for long PNC visits |
| 06. Could not find caregiver in area | 13. Other, specify _____ |

17. ____ How far in the pregnancy were you when you had your first prenatal care visit?

Weeks _____

18. ____ Where did you go for prenatal care?

- | | |
|----------------------|-------------------------|
| 0. No prenatal care | 3. Special OB |
| 1. Health Department | 4. Other, specify _____ |
| 2. Regular OB | |

19. ____ If you went to Special OB, which clinic?

00. Not applicable

01. Fetal Med.

02. Cardiopulmonary

03. Endocrine

04. Psychiatric

05. Teen

06. Hypertension

07. Misc. Comp.

08. Operative

09. Genetic

10. Hematology

11. HPP Clinic

12. High Risk Clinic

20. ____ Did you receive prenatal care outside of Knox County?

1. No

2. Yes

21. ____ If yes, where?

0. Not applicable

1. Private MD

2. Health Department

3. Other hospital/clinic, specify _____

4. Other, specify _____

22. ____ Are you a perinatal transport from an outlying county?

1. No

2. Yes

23. ____ If yes, then where? _____

(county of residence)

24. ____ How many visits did you make with your doctor or clinic for prenatal care?

25. ____ Were you on WIC while you were pregnant?

1. No

2. Yes

26. ____ If yes, how far in the pregnancy were you when you started?

Weeks _____

27. ____ How are you planning on feeding the baby?

1. Breast

2. Bottle

3. Combination

28. ____ Number of pregnancies (include miscarriages, abortions, etc.).

29. ____ Describe any complications during most recent pregnancy: _____

30. Complete the following chart for each of the client's children under 18 years old.

	Unborn/ Newborn	Child 1	Child 2	Child 3
a. First name				
b. Date of birth	<u> </u> / <u> </u> / <u> </u> MM DD YY	<u> </u> / <u> </u> / <u> </u> MM DD YY	<u> </u> / <u> </u> / <u> </u> MM DD YY	<u> </u> / <u> </u> / <u> </u> MM DD YY
c. Gender: <u>Male</u> Female				
d. At risk of placement? 1 = No 2 = Yes				
e. If d = yes, where? (Specific placement) 00 = Not applicable				
f. If d = yes, type of placement: such as foster care, group home, psychiatric hospital, etc. 00 = Not applicable				
g. Anticipated date of placement: 00 = Not applicable 01 = Unknown	<u> </u> / <u> </u> / <u> </u> MM DD YY	<u> </u> / <u> </u> / <u> </u> MM DD YY	<u> </u> / <u> </u> / <u> </u> MM DD YY	<u> </u> / <u> </u> / <u> </u> MM DD YY
h. Birth weight (in oz.)				
i. Premature 1 = No 2 = Yes				
j. If i = yes, how many weeks premature				
k. Prenatal drug exposure 1 = No 2 = Yes				
l. If k = yes, when was fetus exposed? 1 = first trimester 2 = second trimester 3 = third trimester 4 = all of the above				
m. If k = yes, what drug(s) was fetus exposed to? *Please specify:				
n. Prenatal exposure to alcohol? 1 = No 2 = Yes				

Great Starts Pregnancy History

30. Continue following chart for each child under 18 years old.

	Unborn Newborn	Child 1	Child 2	Child 3
a. First name				
o. If n = yes, when was fetus exposed? 1 = first trimester 2 = second trimester 3 = third trimester 4 = all of the above				
p. Allergies 1 = No 2 = Yes				
q. If p = yes, what is child allergic to?				
r. Problems with vision? 1 = No 2 = Yes 0 = Unknown				
s. Problems with breathing? 1 = No 2 = Yes 0 = Unknown				
t. Problems with hearing? 1 = No 2 = Yes 0 = Unknown				
u. Problems with circulation/heart? 1 = No 2 = Yes 0 = Unknown				
v. Problems with medication? 1 = No 2 = Yes 0 = Unknown				
w. If v = yes, what is the child's medicine?				
x. Other area of concern. Please specify.				

31. What family planning method have you used in the past (if any)?

- | | |
|-------------------|-------------------------|
| 0. No method used | 3. Abstinence |
| 1. Contraception | 4. Other, specify _____ |
| 2. Prophylactics | |

32. What family planning method do you currently use (if any)?

- | | |
|-------------------|-------------------------|
| 0. No method used | 3. Abstinence |
| 1. Contraception | 4. Other, specify _____ |
| 2. Prophylactics | |

33. ____ If you sat down to ask yourself the reasons why you got pregnant, what would you say? ____

34. ____ What did your baby's father say about your pregnancy? ____

35. ____ What did people who are important to you say about your pregnancy? ____

36. ____ How old were you when you first became pregnant?

What is the level of involvement of your ____ baby's father

37. ____ with you?

- 0. Not applicable
- 1. A lot
- 2. Some

- 3. A little
- 4. Not involved
- 5. Other, specify ____

38. ____ with ____ baby?

- 0. Not applicable
- 1. A lot
- 2. Some

- 3. A little
- 4. Not involved
- 5. Other, specify ____

What is the level of involvement of your ____ baby's father

39. ____ with you and baby?

- 0. Not applicable
- 1. A lot
- 2. Some

- 3. A little
- 4. Not involved
- 5. Other, specify ____

Are you satisfied with the level of involvement of the baby's father

40. _____ with you?

- 0. Not applicable
- 1. No

- 2. Yes
- 3. Unsure

41. _____ with baby?

- 0. Not applicable
- 1. No

- 2. Yes
- 3. Unsure

Are you satisfied with the level of involvement of the baby's father

42. _____ with you and baby?

- 0. Not applicable
- 1. No

- 2. Yes
- 3. Unsure

43. _____ Are you and the baby's father together?

- 0. Not Applicable
- 1. No
- 2. Yes
- 3. Unsure

_____ Are you and the baby's father

- 01. Dating
- 02. Married
- 03. Co-habiting
- 04. Divorced

- 05. Separated
- 06. Estranged
- 07. Not speaking
- 08. Other, specify _____

44. _____ Is the baby's father going to help you support the baby?

- 0. Not applicable
- 1. No

- 2. Yes
- 3. Unsure

45. _____ If no, who is going to help you with your baby?

- 00. Not applicable
- 01. Paternal Grandparents
- 02. Boyfriend
- 03. Children
- 04. Maternal Grandparents
- 05. Siblings

- 06. Friends
- 07. Aunt/Uncle
- 08. Cousins
- 09. Husband
- 10. Other, specify _____

46. _____ If yes, will anyone else help you with your baby?

- 00. Not applicable
- 01. Paternal Grandparents
- 02. Boyfriend
- 03. Children
- 04. Maternal Grandparents
- 05. Siblings

- 06. Friends
- 07. Aunt/Uncle
- 08. Cousins
- 09. Husband
- 10. Other, specify _____

Great Starts Pregnancy History

CLIENT # _____ DATE _____

PARENTING STRESS INDEX

(Short Form)

Richard R. Abidin
University of Virginia

Directions:

In answering the following questions, please think about the child you are most concerned about.

The questions on the following pages ask you to mark an answer which best describes your feelings. While you may not find an answer which exactly states your feelings, please mark the answer which comes closest to describing how you feel.

YOUR FIRST REACTION TO EACH QUESTION SHOULD BE YOUR ANSWER.

Please mark the degree to which you agree or disagree with the following statements by circling the number which best matches how you feel. If you are not sure, please circle #3.

1	2	3	4	5
Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree

Example:

I enjoy going to the movies. (If you sometimes enjoy going to the movies, you would circle #2.)

1 2 3 4 5

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CLIENT #

DATE

Strongly Agree

Agree

Not Sure

Disagree

Strongly Disagree

1. I often have the feeling that I cannot handle things very well. 1 2 3 4 5
2. I find myself giving up more of my life to meet my children's needs than I ever expected. 1 2 3 4 5
3. I feel trapped by my responsibilities as a parent. 1 2 3 4 5
4. Since having this child I have been unable to do new and different things. 1 2 3 4 5
5. Since having a child I feel that I am almost never able to do things that I like to do. 1 2 3 4 5
6. I am unhappy with the last purchase of clothing I made for myself. 1 2 3 4 5
7. There are quite a few things that bother me about my life. 1 2 3 4 5
8. Having a child has caused more problems than I expected in my relationship with my spouse (male/female friend). 1 2 3 4 5
9. I feel alone and without friends. 1 2 3 4 5
10. When I go to a party I usually expect not to enjoy myself 1 2 3 4 5
11. I am not as interested in people as I used to be. 1 2 3 4 5
12. I don't enjoy things as I used to. 1 2 3 4 5
13. My child rarely does things for me that make me feel good. 1 2 3 4 5
14. Most times I feel that my child does not like me and does not want to be close to me. 1 2 3 4 5
15. My child smiles at me much less than I expected. 1 2 3 4 5
16. When I do things for my child I get the feeling that my efforts are not appreciated very much. 1 2 3 4 5
17. When playing, my child doesn't often giggle or laugh. 1 2 3 4 5
18. My child doesn't seem to learn as quickly as most children. 1 2 3 4 5
19. My child doesn't seem to smile as much as most children. 1 2 3 4 5
20. My child is not able to do as much as I expected. 1 2 3 4 5
21. It takes a long time and it is very hard for my child to get used to new things. 1 2 3 4 5

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CLIENT #: _____

DATE: _____

1 Strongly Agree 2 Agree 3 Not Sure 4 Disagree 5 Strongly Disagree

22. I feel that I am:
1. not very good at being a parent,
 2. a person who has some trouble being a parent,
 3. an average parent,
 4. a better than average parent,
 5. a very good parent.
- 1 2 3 4 5 •

23. I expected to have closer and warmer feelings for my child than I do and this bothers me.
- 1 2 3 4 5

24. Sometimes my child does things that bother me just to be mean.
- 1 2 3 4 5

P-CDI

25. My child seems to cry or fuss more often than most children.
- 1 2 3 4 5

26. My child generally wakes up in a bad mood.
- 1 2 3 4 5

27. I feel that my child is very moody and easily upset.
- 1 2 3 4 5

28. My child does a few things which bother me a great deal.
- 1 2 3 4 5

29. My child reacts very strongly when something happens that my child doesn't like.
- 1 2 3 4 5

30. My child gets upset easily over the smallest thing.
- 1 2 3 4 5

31. My child's sleeping or eating schedule was much harder to establish than I expected.
- 1 2 3 4 5

32. I have found that getting my child to do something or stop doing something is:
1. much harder than I expected,
 2. somewhat harder than I expected,
 3. about as hard as I expected,
 4. somewhat easier than I expected,
 5. much easier than I expected.
- 1 2 3 4 5

33. Think carefully and count the number of things which your child does that bother you. For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc. Please circle the number which includes the number of things you counted.

1. 10+ 2. 8-9 3. 6-7 4. 4-5 5. 1-3 1 2 3 4 5 •

34. There are some things my child does that really bother me a lot.
- 1 2 3 4 5

35. My child turned out to be more of a problem than I had expected.
- 1 2 3 4 5

36. My child makes more demands on me than most children.
- 1 2 3 4 5

D.C.

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Total Score

AAPI

Adult-Adolescent Parenting Inventory

Stephen J. Bavolek, Ph.D.

Form A

Instructions: There are 32 statements in this booklet. They are statements about parenting and raising children. You decide the degree to which you agree or disagree with each statement by circling one of the responses located directly under the statement. If you strongly support the statement, or feel this statement is true most or all the time, circle **STRONGLY AGREE**. If you support the statement or feel this statement is true some of the time, circle **AGREE**. If you feel strongly against the statement or feel this statement is not true most or all the time, circle **STRONGLY DISAGREE**. If you feel you cannot support the statement or that the statement is not true some of the time, circle **DISAGREE**. Use **UNCERTAIN** only when it is absolutely impossible to decide on one of the other choices.

Let's do a sample question together. Read the statement and decide how you feel about the statement by circling only one response.

Example:

Kids should be allowed to do what they want to do.

STRONGLY AGREE AGREE UNCERTAIN DISAGREE STRONGLY DISAGREE

As you can see, there really is no right or wrong answer only your opinion. Inside you will find more questions like the one above. When you are told to turn the page, begin with Number 1 and go on until you finish all the questions. In answering them, please keep these four points in mind:

1. Answer the questions frankly and truthfully. There is no advantage in giving an untrue answer because you think it is the right thing to say.
2. Answer the questions as quickly as you can. Don't spend too much time thinking about what to answer. Give the first natural answer that comes to mind.
3. Don't skip any questions or provide two answers for any question. Make sure you respond to every statement with only one answer.
4. Although some questions may seem much like others, there are no two statements exactly alike so make sure you respond to every statement.

If there is anything you don't understand, please ask your questions now. If you come across a word you don't know while answering a question, ask the examiner for help.

Turn the Page and Begin

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- A B
1. Young children should be expected to comfort their mother when she is feeling blue.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 2. Parents should teach their children right from wrong by sometimes using physical punishment.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 3. Children should be the main source of comfort and care for their parents.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 4. Young children should be expected to hug their mother when she is sad.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 5. Parents will spoil their children by picking them up and comforting them when they cry.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 6. Children should be expected to verbally express themselves before the age of one year.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 7. A good child will comfort both of his/her parents after the parents have argued.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 8. Children learn good behavior through the use of physical punishment.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 9. Children develop good, strong characters through very strict discipline.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 10. Parents should expect their children who are under three years to begin taking care of themselves.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 11. Young children should be aware of ways to comfort their parents after a hard day's work.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 12. Parents should slap their child when s/he has done something wrong.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 13. Children should always be spanked when they misbehave.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 14. Young children should be responsible for much of the happiness of their parents.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 15. Parents have a responsibility to spank their child when s/he misbehaves.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree
 16. Parents should expect children to feed themselves by twelve months.
 Strongly Agree Agree Uncertain Disagree Strongly Disagree

Please go to next page

17. parents should expect their children to grow physically at about the same rate. **A B C**
Strongly Agree Agree Uncertain Disagree Strongly Disagree
18. Young children who feel secure often grow up expecting too much.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
19. Children should always "pay the price" for misbehaving.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
20. Children should be expected at an early age to feed, bathe, and clothe themselves.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
21. Parents who are sensitive to their children's feelings and moods often spoil their children.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
22. Children deserve more discipline than they get.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
23. Children whose needs are left unattended will often grow up to be more independent.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
24. Parents who encourage communication with their children only end up listening to complaints.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
25. Children are more likely to learn appropriate behavior when they are spanked for misbehaving.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
26. Children will quit crying faster if they are ignored.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
27. Children five months of age ought to be capable of sensing what their parents expect.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
28. Children who are given too much love by their parents will grow up to be stubborn and spoiled.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
29. Children should be forced to respect parental authority.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
30. Young children should try to make their parent's life more pleasurable.
Strongly Agree Agree Uncertain Disagree Strongly Disagree
31. Young children who are hugged and kissed often will grow up to be "sissies."
Strongly Agree Agree Uncertain Disagree Strongly Disagree
32. Young children should be expected to comfort their father when he is upset.
Strongly Agree Agree Uncertain Disagree Strongly Disagree

Please complete information on the back page.

Please complete the following information:

Name: _____ Age: _____ years

Sex: (Circle one) Male Female

Race: (Circle one) White Black Hispanic Asian Oriental

American Indian Other: _____

If appropriate: Name of School: _____

Grade Level: _____ Date: _____

Please feel free to add any comments you have:

VITA

Darlene Grant was born in Cleveland, Ohio in 1960. She attended Cleveland Public Schools, receiving a high school diploma in 1978 from Glenville High School. Her undergraduate work was taken at Wittenberg University (Springfield, Ohio) where she graduated in 1982 with a major in sociology. She pursued a master's degree in Social Work at Case Western Reserve University (Cleveland, Ohio), receiving the degree in 1984. Her social work specialization was direct practice with children and families.

While attending graduate school full-time Ms. Grant worked full-time as an advocate/counselor for Women Together (Cleveland, Ohio), a shelter for battered women. In 1984, Ms. Grant joined the staff at the Child Guidance Center (Cleveland, Ohio) as a Psychiatric Social Worker. there she became expert in the area of treating sexually abused children and adults. She also began the area's first therapeutic outreach programs for inner-city adolescent prostitutes and male adolescent perpetrators of sexual abuse. In early 1986 Ms. Grant moved to the Catholic Counseling Center (Cleveland), where she worked with children who had school phobias and other school-related problems.

In November 1986 Ms. Grant joined the Social Services staff of Peninsula Psychiatric Hospital (Louisville, Tennessee) as a Family Therapist on the Adult Chemical Dependency Treatment Unit, becoming well known for her work in the area of chemical dependency and family therapy. She designed and implemented the area's first outpatient Adult Children of Alcoholics (ACoA) treatment program and traveled extensively as a lecturer and program design consultant. In the Knoxville community, she has helped to establish and run a half-way house for drug-addicted women and given community lectures, agency consultation, and advocacy for drug addicted women and their children at the state and local government levels.

Ms. Grant entered the University of Tennessee College of Social Work in September, 1988 as a Patricia Roberts Harris Fellow. She received a Doctor of Philosophy in Social Work degree in May, 1994. She is a member of the National Association of Social Workers, Academy of Certified Social Workers, Council on Social Work Education, and is licensed as a Social Worker by the state of Tennessee. From July 1991 to June 1993 she was employed as a Program Evaluator and the Coordinator of Certification Testing and Validation, for the College of Social Work, Office of Research and Public Service, University of Tennessee, Knoxville.

Prior to graduation Ms. Grant was extended and accepted an invitation to join the faculty at The University of Texas at Austin, School of Social Work.